

105-6
The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

TRUSTEES

Mass.:
OF THE

WORCESTER STATE HOSPITAL

FOR THE

YEAR ENDING NOVEMBER 30,

1937



PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE
550. 4-38. Order 3761.

OCCUPATIONAL PRINTING PLANT
DEPARTMENT OF MENTAL DISEASES
GARDNER STATE HOSPITAL
EAST GARDNER, MASS.

1938
412

WORCESTER STATE HOSPITAL

(Post Office Address: Worcester, Mass.)

BOARD OF TRUSTEES

WILLIAM J. DELAHANTY, M.D., *Chairman*, Worcester.
 ANNA G. TATMAN, *Secretary*, Worcester.
 JOHN G. PERMAN, D.M.D., Worcester.
 JOSEPHINE R. DRESSER, Worcester.
 JOHN L. BIANCHI, Worcester.
 ROBERT R. PORTLE, Worcester.
 HARRY KENNEY, Boston.

RESIDENT STAFF

WILLIAM A. BRYAN, M.D., *Superintendent*.
 FRANCIS H. SLEEPER, M.D., *Assistant Superintendent*.

PSYCHIATRIC SERVICE

MORRIS YORSHIS, M.D., *Clinical Director*.
 ARTHUR J. GAVIGAN, M.D., *Psychiatrist in charge of Women's Dept.*
 FRANCES COTTINGTON, M.D., *Assistant*.
 JAMES WATSON, M.D., *Assistant*.
 WALTER E. BARTON, M.D., *Psychiatrist in charge of Men's Dept.*
 CLIFFORD HALVORSEN, M.D., *Assistant*.
 MAURICE GREENHILL, M.D., *Interne*.
 GREGORY ROCHLIN, M.D., *Interne*.

MEDICAL AND SURGICAL SERVICE

EMBRIE J. BORKOVIC, M.D., *Acting Director*.
 WILLIAM FREEMAN, M.D., *Pathologist*.
 JOSEPH DE MARCO, M.D., *Assistant*.
 EDWARD J. KELLEY, M.D., *Assistant*.
 SIMON G. HAROOTIAN, D.M.D., *Dentist*.

RESEARCH SERVICE

ROY G. HOSKINS, Ph.D., M.D., *Director*.
 JOSEPH M. LOONEY, M.D., *Director of Laboratories*.
 D. EWEN CAMERON, M.B., D.P.M., *Psychiatrist, Executive Officer*.
 HARRY FREEMAN, M.D., *Internist*.
 LOUIS H. COHEN, Ph.D., M.D., *Psychiatrist*.
 ANDRAS ANGYAL, Ph.D., M.D., *Psychiatrist*.
 CONRAD WALL, M.D., *Psychiatrist*.
 ROBERT FUCHS, M.D., *Internist*.
 LOUIS S. CHASE, M.D., *Clinical Assistant*.
 DAVID SHAKOW, M.A., *Chief Psychologist*.
 E. MORTON JELLINEK, M.Ed., D.Sc., *Chief Biometrician*.
 GEORGE L. BANAY, Ph.D., *Medical Librarian*.

OUT-PATIENT DEPARTMENT

MILTON E. KIRKPATRICK, M.D., *Director, Child Guidance Clinic*.
 PAUL JORLAN, M.D., *Assistant*.

SUMMER STREET DEPARTMENT

LONNIE O. FARRAR, M.D., *Medical Director*.

VISITING STAFF

ERNEST D. HUNT, M.D., *Surgery*.
 ARTHUR BRASSAU, M.D., *Surgery*.
 FRANKLYN BOUSQUET, M.D., *Surgery*.
 JOEL M. MELICK, M.D., *Gynecology and Obstetrics*.
 DONALD K. MCCLUSKEY, M.D., *Gynecology and Obstetrics*.
 LESTER M. FELTON, M.D., *Genito-Urinary Surgery*.
 JOHN O'MEARA, M.D., *Orthopedic Surgery, Roentgenology*.
 OLIVER H. STANSFIELD, M.D., *Internal Medicine*.
 ERWIN C. MILLER, M.D., *Internal Medicine*.
 MICHAEL M. JORDAN, M.D., *Neurology*.
 JACOB GOLDWYN, M.D., *Neurology*.

JULIUS J. TEGELBERG, M.D., *Oto-Laryngology*.
 ROSCOE W. MYERS, M.D., *Ophthalmology*.
 PHILIP H. COOK, M.D., *Roentgenology*.
 GEORGE A. DIX, M.D., *Dermatology*.
 OSCAR A. DUDLEY, M.D., *Epidemiology*.
 HUDSON HOAGLAND, Ph.D., *Neurophysiology*.
 MELVIN A. CLEVETT, *Physical Education*.

HEADS OF ADMINISTRATIVE DEPARTMENTS

HERBERT W. SMITH, *Steward*.
 MARGARET T. CRIMMINS, *Treasurer*.
 WARREN G. PROCTOR, *Engineer*.
 ANTON SVENSON, *Foreman Mechanic*.
 JAMES MISTARK, *Head Farmer*.
 LILLIAN G. CARR, *Matron*.
 KATHERINE MCLEAN STEELE, B.S., R.N., *Superintendent of Nurses*.

TRUSTEES' REPORT

To His Excellency the Governor and the Honorable Council:

In the management of a mental hospital a Board of Trustees can be of great service to the Commonwealth in two ways:

1. Through frequent consultations with hospital officials and the Department, professional and financial policies can be established that will enable the institution to function efficiently and at the same time protect the interests of both patients and taxpayers. It is our belief that a Board of Trustees should not participate in the actual administration of these policies. It is a board responsibility to select a competent administrator who has shown executive ability and set up such checks and balances as are needed to know that the standards as agreed upon by both board and executive are being carried out. Boards should be policy-forming, fact-finding agencies. In the day by day operation of the hospital the members find themselves in difficulty because they have not been trained in the intricacies of institutional management. Executive decisions, when made by a group will inevitably be slow, wasteful and cumbersome.

2. One of the important responsibilities of the trustees is to correctly interpret the hospital to the citizens of the community. Such interpretation should be based upon an accurate knowledge of the guiding policies of the institution and particularly upon a confidence in the ability of the administrator in charge of the organization. In spite of the excellent educational work that has been going on in the community over a long period of time there is a great deal of misunderstanding regarding the purpose and function of the mental hospital. The idea of disgrace in connection with mental disease is still the governing factor in establishing the mental attitude of many citizens. Fear and apprehension are still present in the minds of many people. A Board of Trustees made up of men and women who have a certain degree of prestige in the community is a powerful aid in building up public confidence.

Your board wishes to reiterate its belief in the policies of the hospital such as are mentioned in previous reports. These policies are:

1. Active treatment for all patients in the hospital. The idea of the mental hospital as a custodial institution dies hard. If the best interests of the public are to be considered every mental hospital must be a real treatment center and patients must be promptly discharged when they have recovered. This is, in our opinion, the way to an eventual decrease in the cost of mental disease. Such treatment must include the care of physical disease. It is our belief that the mental hospital should be as well-equipped and manned for the treatment of physical illness as the best general hospital.

2. Research is an important part of this hospital and we believe that it is sound policy to support it to the limit of our resources. If the efficiency of the institution is to be judged on the basis of the number of patients cured and discharged, new methods of treatment should be developed as soon as possible. Every effort must be made as rapidly as funds will permit to try new avenues of approach to the problems of mental disease.

3. We feel that the policy of teaching young men and women of the medical and allied professions something about the difficulties of this great public health problem is proper. The tremendous changes that our country is going through and the necessity for the individual to readjust his thinking and emotional life to these changes, make it imperative that those who are fitting themselves to minister to human beings be familiar with the rocks on which lives are wrecked. Nowhere can this be learned more readily than in work with patients who have failed to make satisfactory social adjustments.

4. We believe it is a proper activity of the hospital to work in the field of prevention and it seems to be commonsense to say that the favorable time for such preventive measures is in childhood. The work of the Child Guidance Clinic shows that many children are already laying the ground work for future mental difficulties through bad emotional adjustment and every effort should be made to study and help these children before a worse condition develops.

This is the program and policy of the hospital and your board thoroughly believes in its soundness. But to carry it out more than a program is required. Finances and personnel are important considerations and the extent to which these policies can be carried is limited by the other two factors. The program cannot proceed faster than finances will permit and personnel of the quality and number to make an advance in the march towards the goal is dependent upon the amount of money available. Your board believes that expenditures of money for equipment and personnel to further the program of treatment, research, teaching and prevention will earn rich dividends for the Commonwealth, not only in decreased cost but in increased human happiness among our citizens. The dreadful toll that mental disease takes in the community is appalling and it is the firm belief of this board that constructive and vigorous measures should be taken to combat it on a large scale and along a considerable front.

The report of the superintendent and other officers of the hospital gives the details of work done during the year. We wish to express our satisfaction with the general activities of the institution and to register our belief that both officers and employees have been diligent and active in carrying out these policies of the Board.

Respectfully submitted,

WILLIAM J. DELAHANTY, *Chairman*
ANNA C. TATMAN
JOSEPHINE ROSE DRESSER
JOHN G. PERMAN

JOHN L. BIANCHI
ROBERT R. PORTLE
HARRY F. KENNEY
Trustees.

SUPERINTENDENT'S REPORT

To the Trustees of the Worcester State Hospital:

I herewith respectfully submit the following report of the hospital for the year ending November 30, 1937, it being the one hundred and fifth annual report.

The annual report of any hospital is an account of the stewardship of those charged with the responsibility of rendering certain services to the community and expending the money appropriated by the legislature for this service. This report is designed to enumerate the professional services carried on for the benefit of those who have been committed to our care during the year. It is likewise a record of the return to the Commonwealth on the financial investment.

The practice of judging hospital efficiency on the sole basis of per capita cost is misleading. This cost can be cut to a point at which the purpose for which the institution was built is defeated. The hospital with the highest per capita cost may be getting more for the money expended than the one which is maintained at a low rate. It is important in the comparison of hospitals that both quality and quantity of professional work be taken into consideration. Admission and discharge rates are important. The standard of custodial and therapeutic care established by the hospital, and the degree of success with which these standards are carried out governs the cost. The investment return and to some extent the real index of hospital performance must be based on the number of patients returned to the community thus relieving the State of the responsibility of further care. It is only when these factors are studied in conjunction with per capita cost that conclusions can be drawn regarding hospital efficiency.

Mental hospital administration has passed beyond the one-man stage and entered into a period of large scale production. Cooperation, in the best sense of that mis-used term is essential if these complicated organizations are to function as integrated machines. The administrator must ever keep in mind the triad of factors that motivates every hospital policy. These factors are: *Program, finances, personnel*. These are so interwoven and intermingled that it is impossible to consider one to the exclusion of the others.

There is both a professional and business side to the administration of the mental hospital exactly as there is a technical and business aspect to most industrial activities. The two viewpoints are not antagonistic but supplementary. Like everything in the institution, the finances are a tool for the psychiatric administrator to use in the treatment of patients. But he must know something of its possibilities and what it can accomplish. He must be the master and not the slave of finances.

When the professional group in the hospital can grasp the simple fact that they could not exist without those who carry on the business activities and the latter group realize that the professional work is the only justification for their existence, the entire matter of mental hospital administration will be simplified. If each group will broaden its viewpoint and take in the entire horizon instead of a small segment, the resulting integration would lead to increased efficiency.

The most important factor in the operation of any organization is the people who make up the group. Hospitals are not made of bricks and mortar but of human beings, patients and employees. The progress the institution makes in its advance towards a given goal is dependent, in a large measure, upon the paid personnel. The several aspects of this personnel problem may be outlined briefly as follows:

Number of Personnel. — The present quota of employees in many departments of the hospital is inadequate. The ward service is an outstanding example of this fact. When vacations, days off and sickness are taken into consideration the number actually on ward duty at any given time is entirely too small to permit the very highest standard of psychiatric care and treatment. Increased supervision of patients will mean more treatment, fewer accidents, less destruction and higher standards of care.

A recent study made on the medical and surgical service of this hospital shows the time devoted to bedside nursing care per patient in twenty-four hours to average approximately one hour and twenty-five minutes. The nursing care per individual patient on some of the psychiatric wards is as low as nine minutes per patient for twenty-four hours. The top is one hour and fifty-one minutes on the reception and insulin wards. If the hospital is to maintain what we believe the proper standards of psychiatric treatment more personnel is an absolute necessity, and to carry on special therapies such as Insulin and Metrazol treatment a still further increase in personnel must be forthcoming.

The number of physicians on the medical staff is inadequate to give the close personal supervision to small groups that is essential to good therapy. I am convinced that there will always be a limit to intense psychotherapy with individual patients. The future of psychiatric treatment for psychotics in mental hospitals must be built around group therapy. Small groups of individuals must be treated by physicians rather than dealing with the individual alone, but there is not a sufficiently large medical staff to carry out this procedure properly, and to the point where it will give maximum results. I, therefore, make the following recommendation:

There are certain special positions that are given to all hospitals regardless of size and admission rate. The professional administration of the hospital requires a certain number of individuals whose duties prevent them from actively treating patients. Their positions are highly specialized and contribute to the patients only indirectly and these should not be a part of the general ratio. It is my recommendation that the following positions be considered exclusive of the quota:

Superintendent	Director of Out-Patient Clinics
Assistant Superintendent	Dentist
Clinical Director	Psychologist
Director of Laboratory	

I would suggest the following for establishing a quota of medical officers for the hospital:

1. One physician for each 125 patients admitted yearly.
2. One physician for each 250 patients in the resident population.

This would be equally divided between the Senior and Junior physicians.

What I have said in regard to the ward service is equally true of other departments. I call attention particularly to the clerical staff, and the maintenance group. As treatment increases and the professional load is added, record keeping becomes more complicated, and it adds to the burden of the clerical group. A careful study and survey should be made and repeated at frequent intervals to determine the proper amount of personnel to handle the clerical side of the administration, both financially and professionally.

The Summer Street Department of this hospital is 104 years old. The main hospital was completed in 1878. Both are very old buildings and their maintenance in a high stage of efficiency becomes increasingly difficult each year. The quota of maintenance workmen is entirely insufficient to keep the building up in the way it should be to protect the investment of the state. I also recommend that a cost accounting system be established with the goal of bringing about a more equitable adjustment of the quota of maintenance personnel.

Some flexibility in regard to number would be a great advantage to the administrator in assigning available employees and would concentrate nursing energies during peak loads of the day.

Quality of Personnel. — The selection of ward and other personnel is a part of this problem. Well trained and experienced ward nurses and physicians are indispensable in maintaining high standards of professional care. It is our opinion that the nursing personnel should be built around the graduate nurse rather than untrained attendants. There are many reasons why this should be so, and there will be no dearth of graduate nurses if the field of psychiatry is open to them, and if the salaries paid are commensurate with the investment required for special training. We need an additional classification for nurses to make the service more flexible. The grade required is comparable to that of charge attendant, but being a salary one step higher than the latter. Such nurses should be called floor duty nurses. This would add a great deal to the present service.

The problem of building morale and integrating the organization in the direction of better care and treatment is always with the administrator. The eight hour day has been of inestimable value in this particular regard. It is our belief that eight hours is sufficiently long for anyone to spend with psychotic patients and keep up a high standard of ward administration. Our experience with this system proves to us that it is a forward step in improving the service to the patient.

As an expedient for gaining improved morale, we have found it preferable to handle the disciplinary problems with employees through a group of medical officers and supervisors presided over by the Superintendent or Assistant Superintendent rather than to charge one person with the responsibility of making a decision which penalizes an employee. The employee is protected from the emotional reactions and prejudices that are inseparable where these matters are handled by one person.

Training Personnel. — While higher qualifications required for ward nurses and attendants are useful, they do not take the place of actual training in the specific problems of the particular hospital where they are employed. We have carried on during the year a limited training and educational program for ward personnel. We feel that it is deficient in that the employee is not required to fit himself for the job before he or she actually goes on duty. It is our opinion that every new employee regardless of the department he is employed in should be given a minimum training period to acquaint him or her with the problems of the particular institution, and preferably this training should be given before they take the position. Unfortunately, the number of employees allowed does not permit this to be done.

Therapy. — The emphasis upon therapy has more and more permeated the organization during the past year. It is my opinion that the mental hospital will never attain real prestige in the community until it is organized on the basis of a therapeutic approach, rather than upon a policy of mere humane and kindly care.

While a high standard of custodial care is the foundation for all psychiatric treatment, this in itself is not sufficient. Therapy means the difference between a hospital and the custodial institution. Perhaps the most significant therapeutic development has been the work with Insulin and Metrazol in Schizophrenia. There can be no question that these methods of treatment have brought about changes in the system of individual patients that cannot be explained away as fortuitous in character. The hospital has kept in mind constantly the necessity for caution in the evaluation of results, and is not prepared, even after a considerable experience, in drawing any sweeping conclusions, and only time and careful research work will determine the place in psychiatry of these methods of treatment.

Work has been carried on with the Narcosis treatment, Vitamin B and Photodyne. No definite conclusions can be given, as they are being scrutinized from the research point of view.

It is not my purpose to elaborate on the individual reports. They show in some detail the work of the various departments of the hospital, and a perusal of these reports will give a fair indication of the amount that is being carried on.

CONSTRUCTION RECOMMENDATIONS

These may be considered seriatim. It is understood that all of these recommendations cannot be carried out at once. Each recommendation is considered in order of importance:

A. MAIN HOSPITAL

I. Laundry Building

This is the first step in a program of development that will lead to better efficiency on the business side of the hospital. The present laundry is entirely inadequate for handling the load required in the maintenance of proper standards of patient care. It cannot be adapted to present-day needs. It is proposed to erect a new laundry building with modern equipment on the site of the present garage. The building will be one story but because of the conformation of the land a basement is necessary. This will be adequate to care for the garage needs of the institution so far as the state owned cars are concerned. The laundry will be planned to take care of the future needs of the institution.

II. Conversion of Present Laundry Building into a Storehouse

The present storeroom facilities are wasteful and inefficient. The storeroom of a hospital is the neck of the bottle through which *all* materials and supplies should be received and issued on requisition. When the facilities are so limited that this cannot be done, waste inevitably results. The present laundry building is an ideal location for a storeroom. It is the center of the institution, easily accessible from all points. With a comparatively small expenditure of money the building can be converted into an excellent storeroom with adequate facilities for the proper storage of all supplies.

III. Conversion of the Present Strawbarn into an Industrial Building

The building located in the rear of the institution known as the "strawbarn" is now an adjunct to the storeroom and is used for the storage of heavy materials. If and when the storeroom is moved to the present laundry building this material will be in the central store. The present second floor of the so called "industrial building" will be needed for storage of supplies and the present industrial shops will have to be moved. The sewing room must also be relocated. It is proposed to renovate the present "strawbarn" and convert it into industrial shops, including a sewing room.

IV. Replacement of Floors

A program of floor replacement in the Main Hospital is an important part of a developmental plan. There are two reasons why this should be done. In the first place these old splintered wood floors, soaked with oil and wax are a dangerous fire risk. In the second place they increase the difficulty of keeping down vermin of all kinds. This program will require at least ten years to complete. Only one building can be completed each year.

Floor replacements will also include certain changes that are essential for the proper classification of patients. Dividing the large wards, Washburn, Phillips,

Lincoln and Salisbury would enable us to segregate disturbed patients and care for them in smaller units. To make this division of wards additional toilet sections must be built.

V. Modernization of Medical and Surgical Service

A. Improvement of Feeding Facilities. — A complete renovation of the facilities for supplying food to the patients on these wards is badly needed. A basement diet kitchen on each service will permit a centralization of the food service which will tend to lower the cost and increase the efficiency. Trays will be prepared in the kitchen and sent to the ward. They will be returned to the diet kitchen to be washed and no dishes will be kept on the wards. This will relieve the ward personnel of the duty and responsibility of food preparation and permit them to utilize the time in other necessary service to the patients. All tray preparation and dish washing will be centralized in these diet kitchens. Centralization means economy.

B. Installation of Elevators. — A general hospital of four floors without passenger elevators is laboring under a great handicap. Sick patients must be carried up and down stairs. A passenger elevator sufficiently large to take a bed should be installed in each service.

C. Surgical Suite. — The number of examinations, special treatments and surgical procedures carried on by this hospital calls for a better lay-out than we have at the present time. If the present quarters of the Superintendent could be used, a modern surgical and diagnostic suite could be established. The space on the second floor of the Sargent building now occupied by employees could be utilized and an excellent surgical ward for patients would be arranged.

D. Tubercular Wards. — The facilities for the care of tuberculosis are entirely inadequate at this hospital. There are several ways in which this problem can be dealt with. A new building is not indicated but changes can be made in the existing structure which will improve the present way of caring for these tubercular patients.

VI. Employee Housing

If the present policy of employees living in the hospital is to be continued, additional accommodations must be furnished in the very near future. An addition of at least 100 beds to the present Nurses' Home is indicated and the present farmhouse should be converted into a building for physicians and employees. Additional cottages for physicians should also be erected at an early date.

VII. Porches

Additional porches should be built for the Salisbury, Lincoln, Appleton, Woodward, Howe and Phillip wards. The porch on Quinby ward should be demolished and rebuilt. This will permit additional day space.

B. SUMMER STREET DEPARTMENT

The future development of the Summer Street Department should call for careful and serious consideration. There are three possible ways in which the present institution can be planned.

1. Continue to use the building for quiet, chronic patients.
2. Convert it into a receiving service for the main hospital and a psychopathic hospital for the City of Worcester.
3. Convert it into a psychiatric research institute.

Arguments for and against each of these courses may be made but no matter what the future use of the building is to be certain improvements should be made.

I. Replacement of Floors

The need for floor replacement is as acute at Summer Street as it is at the Main hospital. The building has the same kind of wooden floors. These constitute a decided fire risk.

II. Improved Dining Facilities

The need of this improvement is more urgent every year. The present method of feeding patients is wasteful and results in poor food for those patients who are housed there. The present dining room should be used for other purposes and a modern cafeteria system installed in the center of the building on the first floor.

If the building is to be used for either the second or third purpose, certain other changes will have to be made.

II. Porches

Porches should be built on the front of the Summer Street buildings to provide day space and eliminate the over-crowding in this department.

C. FARM

I. Completion of Present Farm Unit, in Order that the Herd may be brought together

The present farm unit should be completed in order that the herd may be brought together. The present separation is expensive and adds to the cost of milk production. This improvement is, of course, based upon the continuation of the policy of mental hospitals producing their own milk. This is a question that should receive serious and careful study. In my opinion, any utilitarian procedure that cannot be defended on the basis of lessened cost or treatment of patients should be eliminated from every institution. The herd can only be defended on the basis of lower costs. It has little importance in the actual treatment of patients in an industrial community like our own.

The matter of food conservation should receive early consideration and records should be installed that will permit an accurate estimate as to whether canning on a commercial scale should be continued in the institutions. Other methods of food conservation should be given more thought and attention than has been the case in the past. A freezing plant for all institutions might be seriously considered. Gardening should always be retained because of its value in patient therapy, but canning or freezing have no such value and must be judged solely on the basis of economy.

In conclusion may I record my sincere appreciation to the Board of Trustees for their continued enthusiastic support. Their aid and counsel has definitely lightened my administrative burdens. I also wish to express my thanks for the loyal co-operation I have received during the year from the officers and employees of the hospital. It is a real pleasure to publicly commend their efforts to improve the service rendered by the Worcester State Hospital.

STAFF CHANGES

Appointments. — Dr. James Watson — appointed assistant physician, January 4, 1937, Psychiatric Service; Dr. Beatrice Kershaw — appointed assistant physician. April 3, 1937, — Medical Service; Dr. Joseph De Marco Jr., appointed assistant physician, September 27, 1937 — Medical Service; Dr. Frances Cottington promoted from interne to assistant physician, November 1937; Dr. Edward J. Kelley appointed assistant physician — November 8, 1937 — Medical Service.

Resignations. — Dr. Thomas C. Murray appointed assistant physician December 19, 1935, resigned December 17, 1936, to continue studies in pediatrics. Dr. Beatrice Kershaw resigned September 25, 1937, to teach in Boston. Dr. Benjamin Simon, Senior Physician, was given leave of absence for one year to study at Queen's Square Hospital in London, September 16, 1937.

PSYCHIATRIC SERVICE

Morris Yorshis, M.D., Clinical Director

Movement of Population

During the year there were 540 first admission patients received — 44 less than the previous year but there were 34 more patients readmitted. The total number received was 800. The total number discharged was 402; patients discharged as recovered, 134; patients discharged from the hospital as improved, 167; patients out of the hospital on visit or otherwise absent, 489.

Diagnosis of the patients admitted:

General paresis	31
Suffering from psychosis with cerebral arteriosclerosis or senile dementia	139
Dementia praecox	123
Without psychosis	70

Among the discharges:

General paresis	17
Psychosis with cerebral arteriosclerosis	20
Dementia praecox	106
Without psychosis	101

The increase in the number of patients with arteriosclerosis presents a very difficult problem since these patients rarely recover — 20 such patients being discharged from the hospital during the fiscal year. Thus the age of the hospital population is definitely increasing, necessitating more personnel and more wards to be devoted to debilitated senile patients. The number of patients admitted and discharged as without psychosis shows the frequency with which various agencies and local hospitals are making use of the hospital as a diagnostic and treatment facility. During the year, 27 patients were discharged from family care and placed on visit; 4 patients were discharged outright as recovered. There were 108 patients that remained in family care on September 30, 1937.

In order to further the opportunities for intensive treatment, the psychiatric service was divided into male and female reception units and a continued treatment service.

The reception service because of its greater concentration on therapy necessitated increasing the ratio of employees to patients. Prior to the segregation of the chronic patient from the acute, the ratio on the psychiatric services was one employee to twelve patients. Now it is one to eight thus enabling the physicians on each acute service to arrange carefully worked out therapeutic programs.

Insulin and metrazol therapy, sodium amytal narcosis and encephalography are all now part of the daily ward work.

Remodeling of the Quimby building made it possible to include into it a portion of the admission ward. This combination unit has provided single rooms for the acutely disturbed patients immediately adjacent to the renovated hydrotherapy unit.

During the year the new therapeutic approaches to schizophrenia were instituted on the female service. Courses of insulin and metrazol treatment were carried out with encouraging results. The use of endocrine preparations in certain patients suffering from involuntional melancholia was undertaken and the results obtained warrant continued employment of this form of treatment.

During the past year the new hydrotherapy building for female patients was opened for use. This event greatly increased our therapeutic facilities and resulted in the availability of this form of treatment for a much larger number of patients. The utilization of the newest mechanical devices in the various hydrotherapeutic procedures reduced to a minimum the factors that were not conducive to optimal results. The addition of the new cafeteria for disturbed patients enabled one to feed the patients without interrupting the hydrotherapeutic treatment. Even the most disturbed patients could, after a period of re-education, conduct themselves at the table in a decorous manner.

The completion and use of an out-door enclosure for disturbed female patients made outdoor exercise available for a greater number. Furthermore the enclosure greatly increased the efficiency with which such patients could be cared for.

PSYCHOTHERAPY

Dr. Conrad Wall has continued along the usual lines of psychotherapy, persuasion and symptomatological analysis being the chief weapons of attack. With psychoneurotics attention has been devoted to methods of approach. Verbal methods were tried entirely with the exception that unfruitful attempts were made to interest several schizophrenics in finger painting. In general, the indirect approach was better, that is, more productive than a direct question and answer method. It was found that a fairly good rapport could be obtained with some patients who had been non-productive by the usual methods of investigation. The conduct of some of these could be changed but there was no evidence that the essential psychosis was affected.

During the latter half of the year some attention was devoted to psychological interference with cases under insulin treatment. As a patient approached a stage when his contact with the outer world seemed to be increasing, he was interviewed

at length one or more times. Attention was devoted to explaining anything which was puzzling him and persuading him that his psychotic symptoms, *e.g.*, auditory hallucinations, might be coming from him. This seed of doubt as to the source of his symptoms having been planted, at a later date direct persuasion was attempted. Although the results were not conclusive and could not be separated from the effects of the insulin, this procedure seemed to be of definite value. Attempts at suggestion while the patient was emerging from a hypoglycemic state were completely unsuccessful. Whether the suggestions were related or not related to the psychosis made no difference.

RECREATIONAL FACILITIES

The traditional hospital dance was discontinued and in its place a "therapeutic dance" substituted. These affairs were usually held on the eve of a holiday. Special decorations were planned to fit the occasion. A select group of patients were picked by the psychiatrists.

Improved facilities made possible by the addition of a second motion picture projector provided more enjoyment of the weekly pictures with a definite reduction of disturbance among patients who have been ill long periods.

Outdoor recreational opportunities were increased. Concerts on the lawn, a new outdoor dance pavillion, a skating rink and soft ball games were some of the specific privileges extended to patients under active therapy.

CONTINUED TREATMENT WARDS

The continued treatment wards first under the direction of Dr. Benjamin Simon, and now headed by Dr. William Holt, is for the first time a separate division of the psychiatric service. Most of the patients on this service have been in the hospital over one year or are in the senium. Despite this, therapy was instituted at once among a group of chronic disturbed patients. Amytal narcosis, metrazol, endocrine preparations, have all yielded results, thus making chronic untidy uncooperative patients more agreeable, working, and institutionally adjusted. Chemical sedation is much less utilized, and seclusion and hydrotherapy can be more carefully prescribed. In the re-classification of patients, all luetics under active treatment were placed on wards nearest to the luetic clinic.

FAMILY CARE AND EXTRA-MURAL PSYCHIATRY

The year 1937 saw the provision of a physician to devote his full time to family care patients and Out-Patient Department problems. This was most urgently needed and hope is expressed that many of the community problems can thus be handled — without requiring hospitalization. Dr. James Watson, the physician, has recommended the discharge of a few of the patients in family care. By contacting these patients much oftener than had been possible heretofore he has been able to dispose of cases that otherwise would have been allowed to become chronic and difficult to discharge ultimately from the hospital.

CERTIFICATION IN PSYCHIATRY

This year the hospital executives became certified by the American Board of Psychiatry and Neurology. The medical staff is especially grateful to Drs. Leo Alexander and Paul Yakovlev, both of whom gave freely of their time instructing the staff in neuroanatomy and neuropathology. Dr. Theodore Von Storch contributed by his illustrative lectures on neuro-roentgenology. All of the senior staff made application to take the board examinations in December.

STAFF LUNCHEONS

For some years it has been the custom to have men from various research centers visit the hospital and address the staff on subjects allied to psychiatry. This year we were very fortunate in having Dr. Stanley Cobb discuss phases of the cerebral circulation. Dr. Tracy Putnam reviewed some of the research activities of the Neurological Unit at the Boston City Hospital. Dr. Houston Merritt spoke about neurosyphilis. Dr. Julius Loman spoke on "Intracranial Hydrodynamics." The above papers, in addition to the added stimulus of the reviews of the literature by various staff members at the journal club and the increased knowl-

edge disseminated by the instructors in neuroanatomy, neuropathology and neuro-roentgenology all helped to raise the level of the staff conferences, which in the past year have emphasized "*what can we do for the patient.*"

With a newly equipped neuro-roentgenological outfit and surgical instruments and a consultant neurosurgeon the hospital is in an excellent position to carry out remedial measures not available heretofore.

During the past year a definite quota of students has been established for the hospital. In 1937 approximately 60 senior medical students from Tufts College Medical School and Boston University School of medicine were in residence, in addition to the other students in disciplines allied to psychiatry.

NURSING DEPARTMENT

Katherine M. Steele, R.N., Superintendent of Nurses

With the increased emphasis on therapy at the Worcester State Hospital, the problems involving the nursing care of these patients have increased.

In the early months of 1937, it became necessary to go over the ratio of personnel to patients on the different services and redistribute some of the personnel in order to have the highest quota on the services where the most treatment was done.

For the medical and surgical service, the ratio established at this time was one employee to four patients. On the research service, where insulin and metrazol treatment of schizophrenics has become a part of the routine, the quota is one employee to 4.5 patients. On the acute psychiatric service, which includes the admission wards, the wards for the acutely disturbed newly admitted patients and the treatment wards, the ratio established was one employee to nine patients. The continued treatment service and the Summer Street Department, where the more chronic cases are placed, have a ratio of one employee to thirteen patients. These ratios were figured, of course, on the number of positions now assigned to the nursing service and the personnel quota is far too low to give adequate nursing care to any of these groups of patients. The ratio on the medical and surgical service and research, we believe, should be one to three; on the acute psychiatric, one to six; and on the continued treatment service, one to ten. This would mean a coverage of the wards during vacations and sickness and would make available a concentration of nursing personnel during emergency situations. At present, the coverage of the wards is adequate only when all personnel is on duty. Every employee has one day off each week which means that one-seventh of all employees are off each day. Vacation of two weeks is granted each employee during the year. These vacations are distributed as evenly as possible throughout the year. Approximately fourteen employees are on vacation at one time. Illness varies with the season, two to ten employees being sick at one time. Thus, at a glance, it is obvious that the number on duty every day is much less than 382, the total nursing payroll.

The type of personnel necessary is another important consideration. The graduate nurse personnel has been concentrated on the research, medical and acute psychiatric services with about twice as many nurses on these services as on the continued treatment services and the increase necessary is entirely for graduate nurses' position, not for attendant positions because the therapy used is demanding more expert nursing skill and knowledge.

The patients being treated with insulin and metrazol must be most carefully watched during treatment and it is essential for nurses to be trained in these techniques and the observations of the reactions of these patients.

The rating of head nurses and charge attendants has continued to be a very useful and fair method of summarizing a nurse's ability and usefulness. These individual rating slips are given to the physician in charge of the service, the supervisors on the service, and anyone else who has immediate supervision and knowledge of the person's work. This group of individuals, with the superintendent of the hospital and the superintendent of nurses, evaluate the individual ratings with comments. The person rated is then shown the result with suggestions as to how she can improve her work and efficiency. The system is invaluable to the administration when promotions are to be considered. As a rule, an individual is rated automatically every six months, but a special rating may be held at any time for consideration of promotion or unsatisfactory work. This relieves any one person of the entire

responsibility for an employee's standing and gives the employee a feeling that his rating is not due to judgment of one or two people.

When mistakes of a serious nature are made by ward personnel, statements by those concerned are submitted to the nursing office. A conference is then held of the same group that rates the individual. The persons under criticism are given an opportunity to present their side of the story. The decision as to handling the case and the punishment is made by the majority of the group in conference.

The ward therapy charts continue to be valuable in maintaining the standard of nursing care at a high level. It is a method for checking the number of bed baths, shaves, hair cuts, entertainments, recreation and occupation given the patients each day of the month and is summarized and criticized by the physician in charge of the service, the supervisor and the administration.

NURSING EDUCATION

Miss Evelyn Pettee, a graduate of Peter Bent Brigham Hospital, who received her B. S. in nursing, June, 1937, at Teachers College, Columbia University, and who has been a member of the nursing staff for several years, is the present Educational Director.

Worcester Hahnemann Hospital, Memorial, and St. Vincent's Hospitals have continued to send 7 of their students to us every three months for psychiatric affiliation, 28 students being taught during the year. The lecture course was given to the large group of nurses from these hospitals for whom a psychiatric affiliation could not be provided.

Curriculum for Affiliates:

		Therapeutic Approaches			
	Hours		Hours		Hours
Psychiatry	20	Hydrotherapy	8	Music — radio	2
Psychiatric nursing	23	Occupational therapy	3	Psychotherapy	1
Ward Clinics	20	Social service	4	Recreational	4

Four staff conferences; and excursions to the State School for Feeble-minded, the Child Guidance Clinic, and the Worcester Court.

There have been a number of requests for affiliation from general hospitals this year which could not be granted because of inadequate housing facilities and due to the student quota permitted by the Department of Mental Diseases.

Five post-graduate nurses were graduated in May, 1937. All of these nurses have continued in psychiatric nursing, one in a private mental hospital in New York State, two at this hospital and two returned to their native country, Panama, to assist in conducting a hospital for mental patients there. Four students were enrolled in the class of 1937. We feel that as these nurses have all stayed in psychiatric work, the course is well worthwhile and pays for itself in improved care of mental patients.

Curriculum for Post-Graduates:

		Hours			Hours
Psychiatry		30	Psychiatric Nursing		30
Dynamic Psychology of Behavior		15	Development Behavior of Children		5
Sociology		15	Ward Clinics		40
Neuro-Anatomy		10	Therapeutic Approaches		61
Endocrinology		5			

Sixty Staff Conferences.

This includes occupational therapy, recreational therapy, physiotherapy, religion, music and radio.

Visitations:

State School for Feeble-minded	Lancaster School
Child Guidance Clinic	Baldwinsville Hospital Cottages for Children
Worcester Court	Florence Crittendon Home
Lyman School	Norwood School Project.

Miss Margaret Diamond has continued to instruct all attendants and new employees in the hospital routine and the essentials of the care of mental patients.

Curriculum for Attendants:

	Hours		Hours
Orientation Series	6	Practical Nursing	16
Laboratory	1	Hospital Routine	4
Hospital Housekeeping	2	Hydrotherapy	4
Routine Reports	1	O. T.	2
Total			36

OCCUPATIONAL THERAPY DEPARTMENT

Dorothea W. Cooke, O. T. Reg. Director

For the past year the occupational therapy department has devoted all its abilities toward the further development of a program that will provide therapeutic activity for the greatest number of patients. Realizing that the present ratio of occupational therapists to patients makes individual treatment impossible for more than a small percentage of the total patient population, we have aimed at a more comprehensive program whereby the trained registered occupational therapist shall direct others in the carrying on of a daily therapeutic program for all patients.

The occupational therapy department is responsible for the supervision of the three following services, directly and indirectly:

I. NURSES' WARD CLASSES

This is the first indirect service under the direction of occupational therapy.

The department is responsible for a supply room, which is open three times a week at regular hours for the nurse to obtain craft articles, materials, patterns, instructions, and advice for projects to be carried out on the ward under her supervision. This type of occupational activity has been started for the senile, the infirm, the disturbed, and all patients who are unable to adjust to industrial or work therapy, due to physical and mental contra-indications. The policy of this hospital states that the psychiatric nurse has a very distinct and definite responsibility in any program of occupation designed as a treatment measure. Ward housekeeping and the simpler handicrafts are all introductory types of work that serve to prepare the patient for the next step in his or her rehabilitation, namely, industrial therapy.

It is the responsibility of the occupational therapist to guide, to stimulate, and to assist the nurse through teaching and suggestions of various kinds of activity best suited to the patient, but the therapist's efforts during this period should be directed, not towards the patient (except indirectly) but towards the nurse herself, in order to obtain the best and most effective results for the greatest number of patients.

II. PRE-INDUSTRIAL SHOPS FOR MEN AND WOMEN

These shops are located on each service and are directly supervised by a registered graduate therapist.

1. *Male Shop.* — Classes are pre-industrial in nature for the physically handicapped patient who has progressed beyond the nurse's ward class. We find as a rule that male patients adjust to industrial placement without a period of orientation in the shop.

2. *Female Shop.* — There are two types of classes in this shop.

(1) *Morning Class.* — For further re-education and habit training of the continued-treatment patient who has progressed in the nurse's ward class to a point where she is potentially a candidate for hospital industry.

(2) *Afternoon Class.* — For orientation and determination of the therapeutic needs of the newly admitted patient. We have found that some sort of work, however limited in the beginning, makes it easier for the newly admitted patient to adjust to the new circumstances of living in the hospital. A summary of the patient's occupational, avocational, and educational history with her aptitudes, interests, and capabilities is presented by the therapist to the senior physician at a weekly clinic for consideration of an occupational program. The ultimate aim is a therapeutic placement in industry as soon as possible, in an endeavor to restore the patient to economic and social adequacy.

III. INDUSTRIAL THERAPY

This is the therapeutic use of hospital maintenance industries for the benefit of the patient through work activities. It does not indicate just any work in contrast to idleness, but work prescribed by the physician for its physical demands, its emotional effects, its social influences, its mental stimulus, and its integrating power in relation to the individual patient.

We consider industrial or work therapy an indirect service which necessitates the following responsibilities of the occupational therapist:

1. The therapist shall introduce the patient to the job, following the physician's industrial assignment based on the patient's needs.
2. The therapist shall guide, stimulate, and instruct employees who are directing the work of the patient in the hospital maintenance industries.
3. The therapist shall act as a liaison between the physician and the industrial supervisor, interpreting the physician's therapeutic aims in adapting a patient to a particular task, so that the employee's supervision shall be intelligent and therapeutic and his knowledge of the characteristics and peculiarities of the patient shall be thorough.

During the past year patients have been placed in the various services as follows:

FEMALE PSYCHIATRIC TREATMENT SERVICE (*Main Hospital*)

<i>Industrial Office:</i>	Monthly Average
Total industrial placements by prescription	109.7
Adjustments and promotions	90.8
Promotions from pre-industrial shop	18.9
<i>Patient Census:</i>	
Total Patient population	372.8
Patients in industry	268.8
Patients in pre-industrial shop	32.9
Patients occupied in nurses' ward classes as able	71.1

MALE PSYCHIATRIC TREATMENT AND RESEARCH SERVICE (*Main Hospital*)

<i>Industrial Office:</i>	
Total adjustments by prescription	101.3
Adjustments and promotions	71.1
Placements of newly admitted patients directly in industry	24.9
Promotions from pre-industrial shop	5.3
<i>Patient Census:</i>	
Total patient population	319.5
Patients in industry	264.0
Patients in pre-industrial shop	20.0
Patients occupied on ward as able	35.5

FEMALE CONTINUED TREATMENT SERVICE (*Main Hospital*)

Total industrial placements by prescription	39.4
<i>Patient Census:</i>	
Total Patient population	367.7
Patients in industry	210.0
Patients in pre-industrial shop	14.4
Patients occupied in nurses' ward class as able	143.3

MALE CONTINUED TREATMENT SERVICE (*Main Hospital*)

Total industrial placements by prescription	52.5
<i>Patient Census:</i>	
Total Patient population	470.1
Patients in industry	390.0
Patients occupied in ward classes as able	80.1

SUMMARY (*Main Hospital*)

	<i>Female</i>	<i>Male</i>
Total monthly average number of patients in hospital	861.5	895.4
Total monthly average per cent of patients in pre-industrial shop	3.8%	2.23%
Total monthly average per cent of patients in industry	55.5%	73.04%

For the remaining patient population, ward classes on the medical and psychiatric services were conducted by nurses, under the supervision of the Occupational Therapy Department. The number of patients varied, as was to be expected, due to the physical and mental condition of the patient.

We are fully cognizant of the fact that a well-balanced program of occupational therapy should have organized recreational activity. We are looking forward to the time when a well-trained experienced recreational director will be a member of our department. Until such a time recreation on the wards is limited to the nurses' initiative and ability to promote ward parties, simple table games, pool, ping pong, and marching. Community recreational activity is the responsibility of occupational therapy and this past year included dances, community singing, holiday celebrations, and all social activity for the general patient population.

SOCIAL SERVICE DEPARTMENT

Barbara Estes, M.A., Chief Social Worker

At the time of our last annual report the Social Service Department had on a temporary basis Mrs. Adriene Wise to work with Miss Harrington on Family Care. Many applications were investigated during the six months period from September 21, 1936, to April, 1937, in an attempt to find more boarding homes, thus enabling us to place more patients on this basis. It was found that because of the rise in food prices, it was extremely difficult to find families willing to accept patients for the \$4.50 per week paid by the State for boarding patients. Several homes were found which would take patients at \$7 per week and up, but for the same economic reason, few of our families felt themselves able to pay even that sum for their relatives. Consequently, we were unable to place the number of patients deemed essential for the maintenance of two workers on family care and when her second appointment of three months was concluded Mrs. Wise was not reappointed. We feel that it is impossible for one worker to supervise over a hundred patients scattered over such a large area, and in addition, to have the burden of finding and investigating new boarding homes.

Our routine work has progressed smoothly during the year. Statistics include the following:

Histories taken	407	Patients placed in Family Care	82
Investigations made	905	Patients status changed from	
Interviews held	3,175	family care to visit	24

As in previous years, certain cases have been selected by the staff for intensive follow-up work by the Social Service Department. Many of these have involved close cooperation with outside agencies to whom we wish to express our sincere appreciation for their insight and aid.

Educational Work

We have had, as usual, during the past year, social service students, three from Smith College and two from Simmons College, Schools of Social Work. They carry on well their share of the work of the department and are of value to the permanent workers as they serve to keep us acquainted with the latest theories and trends in the field of social work as taught by their respective schools.

Our part in the training program of the hospital has continued with lectures to medical students and nurses, as well as the special program arranged for our own students. Lectures have been given by the different workers in the department to clubs or other interested groups outside the hospital. We welcome always the opportunity to explain the role of the social worker in a mental hospital. Two workers attended the conference for supervisors at Smith College in July, while the State Conference of Social Work, held in Boston in November, was attended by all members of the department.

Several projects in research have been suggested to us by other departments, which would be of value to both services. With our present staff of four paid workers, we are unable to carry on efficiently anything more than the essential routine work. We believe that two additional paid workers, one to be assigned to family care, would enable us to cooperate more fully with other departments in the hospital and would increase markedly the efficiency of our service.

RADIO DEPARTMENT
Wallace F. Searle, Director.
Routine Activities

After seven years of experimentation and careful study we have found that the radio system does definitely contribute to the happiness and health of patients. Because of this fact we make an effort to run the "station" along commercial lines with as careful attention to details as would be paid in any network station. An increasing effort has been made to increase the responsibility of patients working in the department giving them every opportunity to manifest new thought, new ideas, initiative, and originality.

The activities of the radio director can be divided into the following items:

1. Teaching newly assigned patients to operate and announce over the radio.
2. Operating and announcing when patients are ill or discharged until another patient is assigned. Sometimes this is for a period of weeks for only a certain type of patient can be assigned to the department.
3. Minor repairs and trouble finding on the radio system. This includes relay troubles, "shorts", loose connections and trouble that is not of a highly technical nature.
4. It is the business of the radio director to announce all important programmes such as staff members, local talent from Worcester, W.P.A. bands etc.
5. When either patients, employees, or outside talent perform over W.S.H., it is necessary for the radio director to rehearse their program, accompanying them on the piano if necessary, taking microphone tests and playing and announcing the feature when broadcast.
6. Several features a year are presented over the radio by the Director including daily news bulletins, and reading of papers prepared by staff members. Both piano and organ recital series have also been presented.
7. During the year many lectures and talks have been given by the radio director to outside groups including clubs, church groups, study groups, etc. A series of lectures is also given to different nursing groups and to the occupational therapy department.
8. The musical end of church services is under supervision of the Radio Director who also presides at the organ at the main hospital and "fills in" at the Summer Street branch when necessary.
9. Several community sings throughout the year are conducted in the chapel for patients.
10. All activities in the chapel are indirectly under the supervision of the radio department.
11. All typing of records, reports, indices, requisitions, orders, notes, programs, etc. are done by the director.

New Features

After having written to all state hospitals in the country requesting them to fill out a questionnaire relative to music and radio in their institution it was necessary to compile the information we received. This information is so complete that we know practically how many loud speakers there are in every state hospital; how many hours a day they operate; if they have a centralized installation; if they use the radio for therapeutic purposes; the cost of their equipment. It is an interesting fact that one State Hospital allows their most musical patients to go down once a month to the local broadcasting station and put on a program. It is not hard to imagine the amazement of the public upon hearing good musical programs broadcast by mental patients.

With the installation of A. C. current many vital changes were necessary with the radio equipment. About a 1,000 feet of copper shielded wire were installed in the rear of the radio panel to prevent leakage, feedbacks, etc. Two splendidly constructed rheostat volume controls were installed in microphone and master panels. All low level lines were isolated from high level lines in lead conduit. A tapering battery charger was installed to take care of the signal system. Elimination of four amplifiers were made possible by feeding the receiving set directly from our new 20-watt power amplifiers. New acoustically treated material similar to

Celotex was installed both in the control-room and studio. This insures better quality, less echo, and has a tendency to make both rooms sound-proof.

From year to year new demands are being made upon our radio system. Among some of these is our present system of march recordings to the wards. The wards both on the male and female side call the radio when they wish their patients to exercise. We in turn play about 10 minutes of march music, and they march the patients up and down the wards. Request programs from various wards continually come to the radio room. Sometimes these are numbers which we have in our victrola list of recording and again it may be for some program from the outside.

A plan is under way which will in about five years give us a fairly complete index of victrola recordings but also a complete replacement of radio loud speakers. The plan is to purchase one new album of records a month and also replace one speaker a month until the entire hospital is equipped with permanent magnete speakers.

MEDICAL AND SURGICAL SERVICE

W. Everett Glass, M.D., Director

The following report summarizes briefly the activities of the medical and surgical service from December 1, 1936 through November 30, 1937.

1. *Movement of population on service:*

There were 1,082 cases admitted to the service during the past year: this is an increase of 127 cases over the figures of last year. One hundred and thirty six cases were admitted for study only. The largest number of cases were admitted during the months of December, January, February, March and April. During the year 402 males and 403 females were discharged. Discharges from the service detailed as to physical condition are shown in the following tables:

Table I

	<i>Male</i>	<i>Female</i>	<i>Total</i>
Recovered and improved	365	373	738
Not improved	13	12	25
Not treated	24	18	42

2. *Death :*

During the fiscal year 268 patients died as compared with 204 the preceding fiscal year. The following table gives the details of the deaths and autopsies.

Table II

	<i>Male</i>	<i>Female</i>	<i>Total</i>
Total number of deaths	155	113	268
Total number of autopsies	79	52	131
Total number of medico-legal cases			26
Autopsies confirmed ante-mortem diagnoses (70% or more)			123
Autopsies confirmed partially ante-mortem diagnoses (50 to 70%)			7
Autopsies refuted ante-mortem diagnoses (less than 50%)			1
Autopsy percentage of deaths, 48.9.			

During the year 12 patients died at the Summer Street Department.

The autopsy percentage is 48.9%, a decrease of 11.68% from last year. A total of 131 autopsies were done as compared with 124 during the last fiscal year.

The survey of the deaths reveals that as usual pneumonia caused the largest number of deaths, 110 or 41.03%. This is an increase over last year and is directly related to the pneumonia epidemic at this hospital during the year.

In this group there were 31 lobar pneumonia which is equivalent to 29.47%. There is a marked increase over last year. The average age of the pneumonia group is 69.82 years, a slight increase over last year.

Seventy-two patients died as a result of senile changes. This is 26.86% of the total deaths. The average age of this group is 73.46 years, a slight increase over last year's figures.

Twenty-one or 7.83% died from general paresis. The average age of this group is 51.86 years. This is an increase of 5.46 years when compared to this group last year.

Sixteen of 5.97% died from pulmonary tuberculosis. The average age is 54.93 which is about the same as it was last year.

Cancer was the cause of death in 8 cases or 2.98%. This is practically the same figure as last year.

Eight patients died directly or indirectly as a result of fractures, 2.98%. The average age of this group is 76.6 years.

Six patients or 2.23% died as a result of chronic nephritis; the average age was 51 years.

Twenty-seven patients or 10.12% died of miscellaneous causes.

Table III

Consultations:

Eye	104	Medical	13
Ear, nose and throat	17	Orthopedic	6
Gynaecology and Obstetrics	23	X-ray	1,361
General Surgery	47	Others	31

There is no significant change in this part of the medical service. There was a decrease of 46 surgical consultations and about 212 X-ray consultations.

Obstetrics:

There was a decrease in the activity in this department during the past fiscal year. A total of 4 babies were born during the year, as compared with 9 the preceding year. Two of these babies were premature and died soon after delivery.

Table IV

Surgery Detailed:

Amputation, minor	4	Spinal manometrics	37
Appendectomies	3	Suturing	79
Bimanual exams (anaes.)	1	Teeth extrac. (anaes.)	12
Biopsies	8	Thoracotomy	2
Blood transfusions	4	Tonsillectomies	4
Chest aspirations	4	Suprapubic cystotomy and re-	
Cauterization of cervix	3	moval of urethral stone	1
Cholecystectomy	1		

There has been a considerable increase in the number of encephalograms done. A very convenient encephalogram chair was designed and constructed at the hospital. During the year new surgical instruments have been added to our present equipment and we now have a quite complete set of instruments for neurosurgery.

Circumcision	1	Skin Grafts	2
Cystoscopic examinations	1	Reparing vesico vaginal fistula	1
Dilatation and curettage	2	Injection and ligation of vari-	
Deliveries	3	cosities	1
Dislocations	1	Reduction of volvulus	1
Encephalograms	30	Excision of ingrown toenail	1
Enterocolostomy	1	Dlivery, episiotomy with repair	1
Exploratory laparotomy	2	Suspension of uterus	1
Foreign body removal	4	Chalazion	1
Fracture closed, reduction	37	Reduction of volvulus, 1st stage	
Hemorrhoids	1	colostomy	1
Herniorrhaphies	7	2nd stage colostomy	1
Hydroceles	3	Aspiration of Bursitis	2
Hysterectomies	3	Thoracotomy and rib — resection	1
Incision and drainage	125	Removal of corn	1
Injection of varicosities	39	Prolapsed rectum repair	1
Intestinal obstruction	3	Ventral hernia	1
Perineal repairs	1	Sigmoidoscopic, reduction of vol-	
Pneumothorax	8	voulus	1

Proctoscopic examination	1	Manipulation of fracture, nasal	
Rib resection	2	bones	3
Saphenous vein ligation	1	Salpingoophorectomy	3
Sigmoidoscopes	11	Oophorectomy	1
		Excision of new growth	2
Total			479

There has been a considerable decrease in the amount of work done in this item. The decrease is due mainly to the decreased number of pneumothoraces done. This year 8 were done as against 335 last year.

Clinics Detailed:

Table V

Eye examinations	748
Ear, nose, and throat examinations	422
Gynecological examinations	412
Luetic treatments	8,515
Small-pox vaccinations	564
Lumbar punctures	521
Typhoid and para-typhoid inoculations	1,987
Hinton tests	1,358
Others	107
Pneumococci-antigen injections	2,076
Total	16,710

There were about 2,000 less treatments and examinations given this year; the total was boosted by the pneumococci-antigen injections making this year's total about the same as last year. There were 1,561 fewer typhoid and para-typhoid inoculations this year. This accounts mainly for the drop in the total figure exclusive of pneumococcic antigen injections.

Dressings Detailed:

Table VI

Abrasions and lacerations	2,102
Boils and carbuncles	770
Burns	506
Infections	2,922
Ulcerations	1,259
Others	3,359
Total "out patient" dressings	10,618
Total "ward" dressings	31,906
Total	53,442

There is no significant change in this figure over last year.

Employees. — During the year 2,499 examinations and treatments were given. There were 1,264 males and 1,235 females in this group. This is a decrease of 871 over the last fiscal year. Sixty-two males and 89 females were hospitalized during the year. Thirteen males and 17 females required operations. The total number of working days lost by hospitalization was: males 371, female 657, a total of 1,028, an increase of 33 days over the preceding fiscal year. During January 12 farmers and milk handlers were given physical checks and during February 6.

*Dental Report:**Table VII*

	Main Hospital	Summer St. Dept.	Total
Alveolectomy	5	—	5
Bridges	1	—	1
Cleanings	1,420	94	1,514
Examinations (routine)	3,505	244	3,749
Extractions	945	75	1,020
Fillings	810	76	886
Microscopic examinations	1	—	1
Plates	22	1	23
Repairs	22	1	23
Treatments (miscellaneous)	1,541	130	1,671
X-ray diagnosis	69	4	73
Others	2	—	2
General anesthetic cases	14	1	15
Total examinations and treatments	8,357	626	8,983
Total patients examined or treated	4,018	290	4,308

There has been no significant change in this department in spite of the fact that we were without a dentist and dental hygienist during the month of March.

*Table VIII**X-ray Department Analysis:*

X-ray plates used	2,080
Patients examined	1,163
Foot and fingerprints (sets)	36
Photographs	226
Lantern slides	152
Total	3,528

The work in this department would probably have been greatly increased over last year had it not been for the fact that we were without a technician for a short period.

*Table IX**Physical Therapy Department:*

Ultra-violet (Air-cooled)	1,850
Ultra-violet (water-cooled)	195
Baking	1,690
Massage	1,054
Diathermy (Medical)	283
Diathermy (Surgical)	63
Muscle re-education	1,021
Others	94
Total number of treatments and tests	6,250
Total number of patients treated	3,936

There has been a decrease in the amount of work done in this department during the year; this is probably due to the fact that there has been a change in the method of treatment of paretics. With the old method a paretic's temperature was raised to 104° F. and then allowed to fall to normal; ten such treatments were given. Under the new treatment the temperature is raised and held between 105° F. and 106° F. for a period of five hours; six such treatments are given making a total of 30 hours at a temperature of about 106° F.

LABORATORY REPORT
Joseph M. Looney, M.D., Director

The total number of determinations carried out in the laboratory was 47,534 as shown in detail below. It will be noted that one item records 2,816 determinations for chemical analyses of brain. These resulted from the duplicate analyses of 8 brains for 22 different constituents in each of 8 different regions. Inadvertently this item was omitted from last year's report which should have listed the analyses of 11 brains. During the year there were 284 deaths and 137 autopsies. There was a marked fall in the ratio of autopsies to deaths, only 48% being obtained as compared with 61% for last year. This fall in percentage can be in large measure ascribed to the increased demand on the medical service during the pneumonia epidemic last winter and the fact that the service did not have its full complement of physicians. Considerable more pathological work could be carried on if it were possible to have a pathological interne at all times. Under the present arrangement of a definite assignment of a place for such an interne it is expected that we will be able to procure suitable men with less difficulty: We have asked for approval of the A. M. A. for the laboratory for training of pathological internes.

It should be pointed out that only 840 tissue sections were cut during the past year. These were chiefly from the surgical specimens and from the tissues studied for the clinico-pathological conferences. There has accumulated a large amount of histological work which should be cleared up, and which would occupy the full time of another technician. It is hoped that some arrangement may be brought about which will permit us to add a full time histological technician to our staff.

The training of college graduates as laboratory technicians has been carried on as in the past. Many more requests for technicians have come to the laboratory than could be filled. In October five of the technicians took the examinations given by the American Society of Clinical Pathologists and were approved.

The monthly clinico-pathological conferences have continued to exert their educational and stimulating action on the staff members and students.

Doctor Freeman with Doctor Glass presented a paper before the Worcester County Medical Society in February, entitled the Relation of Adrenal Glands at Autopsy to Blood Vitamin C. Since September he has been conducting a course in pathology weekly for the Worcester County Dental Society. He attended the annual convention of the American Society of Clinical Pathologists, and the American Board of Pathology at Philadelphia May 30 to June 5. There he took the examination of the Board and was certified as a specialist in Pathology. He also served for two months as pathologist at the Worcester Cancer Clinic.

The Director, with Doctor Randall, attended the annual meeting of the American Society of Biological Chemists in Memphis, April 21-24. He also attended the annual meeting of the Association for the Study of Internal Secretions, and the Annual Convention of the American Medical Association June 6-12 at Atlantic City. He talked before the student body of Holy Cross College in February on the "Chemistry of the Living Cell".

The work on the investigation of the physiological changes brought about by insulin in schizophrenia, and also the study of the oxidative mechanisms in these patients has been carried on during the year. Preliminary work on the assay of various hormones has been started and will be pushed vigorously the coming year.

LABORATORY REPORT
YEAR ENDING SEPTEMBER 30, 1937

Bacterial cultures	193	Vital capacities	630
Bacterial smears	453	Nitrogen partitions	1,663
Basal metabolisms	836	Plasmodia malaria	4
Blood cultures	67	Platelet counts	9
Blood Creatinine	925	Reticulocyte count	56
Blood N. P. N.	1,840	Schillingrams	69
Blood sugars	3,412	Blood fragility	2
Blood urea	625	Ascitic fluid	30
Blood uric acid	904	Animal inoculation	11
Blood counts (red)	2,938	Ascheim-Zondek tests	7

Blood counts (white)	3,350	Stomach contents	345
Blood counts (diff.)	3,085	Autogenous vaccines	18
Haemoglobins	3,300	Glucose tolerance	78
Clotting times	11	Galactose tolerance	7
Bleeding times	10	Toxicological exam.	1
Icteric index	40	Blood total prot.	6
Vandenbergh test	19	Blood bromide	77
Spinal fluid (cells)	500	Blood globulin	1
Spinal fluid (gold)	487	Blood potassium	166
Spinal fluid (chlor.)	480	Blood Creatine	40
Spinal fluid (gold)	487	Blood potassium	166
Spinal fluid (glob.)	488	Blood lipoids	611
Spinal fluid (sugar)	488	Blood vitamin 'C'	930
Spinal fluid (prot.)	484	Blood choles, free	592
Spinal fluid (diff.)	5	Milk (bact. count)	4
Sputa	865	Milk (broth cultures)	30
Stools	264	Milk (blood plated)	11
Tissue sections	840	Milk (occult blood)	483
Urines	7,562	Phytotoxic index	120
Mosenthal tests	27	Agglutinins.	2
P. S. P.	3	Pneumococci typing	191
Urine (quant. sug.)	372	Skin Test (undul. fever)	4
Urine (bact.)	4	Blood glutathione	80
Urine (bile)	10	Blood acetone	1
Urine (urobil.)	10	Urine (qualit. sugar)	43
Urine (blood)	3	Bang abortus test	3
Blood typing	25	Milk alkalinity test	56
Blood calcium	177	Haldane basal metabolism	48
Blood chloride	130	Water analysis	9
Blood cholesterol	804	Choline-esterase Study	326
Blood hematocrits	274	Blood phosphatase	1
Blood sedimentations	203	Blood sodium	2
Blood gases	230	Blood albumin	1
Blood Ph	142	Urine Ph	16
Blood lactic acids	759	Blood CO	1
Blood magnesium	1	Douche (parasites)	1
Blood phosphorus	163	Skin test (trichiniasis)	1
Chemical analyses of 8 brains.	2,816		
Total			44,718
			2,816
			47,534
Autopsies			137

RESEARCH DEPARTMENT

D. Ewen Cameron, M.D.

The activities of the Research Department during the last year can readily be divided into two periods. During the first of these the work of the research personnel was largely devoted to individual projects, and during the second the emphasis was placed on cooperative studies.

During the first part of the year a considerable amount of work was carried out by the Psychology Department under Mr. Shakow on the concept of adaptation. This represented a continuation of work started in the previous year. It is considered that one of the ways in which the schizophrenic patient deviates most markedly from the normal is in his lessened capacity to carry out adaptation either at the psychological or physiological level. The work on this topic has taken three main directions:

A. The study of mechanisms of adaptation in dynamic situations, *e.g.*, reaction-time experiments;

B. A study of the personality, *e.g.*, Rorschach, tautophone, thinking experiments;

C. A study of the genetic factors which may be responsible for maladaptation, *e.g.*, play experiments.

During the same period the laboratories, under the direction of Dr. Joseph M. Looney, carried out extensive investigations of the effects of the insulin treatment of schizophrenia. In particular the glucose tolerance of patients before and after treatment was studied, and a comparison of the blood gases and blood minerals at the same time intervals was made. Dr. Randall carried out work on the effects of the treatment on the blood lipids and the blood choline esterase. From studies of the latter substance it is anticipated that we shall be able to obtain more precise data in regard to the behavior of the vegetative nervous system.

In the psychiatric group Dr. Angyal was engaged in writing a monograph on the psychology of personality. He also carried out studies on the relationship between the pre-psychotic personality and the type of schizophrenia. Dr. Cohen investigated the type of imagery found in schizophrenic patients and contrasted this with what was found in a group of normal individuals. In addition, work on the effects of high doses of thyroid in schizophrenia, which had been initiated in the previous year, was carried to completion. Dr. Cameron carried on further research into the action of insulin in schizophrenia. In particular this action on lipid metabolism, on other endocrine glands, and on tissue oxygenation was studied. In association with Drs. Hoagland and Rubin, the effects of insulin treatment on the brain wave patterns were considered, and changes in the pattern which concurred with clinical improvement were discovered.

Dr. H. Freeman continued his work on the mechanisms involved in heat regulation. The insensible perspiration was separated into its two components, that from the skin and that from the lungs. Simultaneously basal metabolic determinations were made with the idea of determining with which phase of the insensible perspiration this physiological function would correlate to the higher degree. The fractionation of the insensible perspiration has not been done before with any accuracy, and from this point alone the work is unique. Its ultimate importance remains to be determined when the analysis of the data has been completed, but it should shed a new light on many of the mechanisms involved in the temperature regulation of the body. Studies are also being made upon the effects of preventing the loss of moisture from the lungs by having both patients and normal controls breathe air having a high humidity and a high temperature. Preliminary results show that schizophrenics are not so capable of making readjustments to this situation as are normals. This seems to indicate a sluggishness of the autonomic mechanisms.

Dr. Fuchs has been studying the effects of adrenalin upon the heart rate and blood pressure of normals and schizophrenic patients. The response of the heart rate in both groups showed little difference. The blood pressure response of the patients was, however, significantly reduced. This difference disappeared in response to a second injection. These results appear to indicate that the peripheral mechanism of autonomic reactivity is not impaired in schizophrenia.

During the second part of the year plans were set up for a cooperative attack upon a central project. It had been felt for some time that as we had now established the fact that certain functions in the schizophrenic patient showed definite deviations from normal, it would be desirable to study what happened to these abnormalities as the patient either improved or grew worse. In this way we anticipate that we shall be able to obtain a better idea as to which are the primary abnormalities and as to how the abnormalities are interrelated. Accordingly a program was set up in which abnormalities of O_2 metabolism, of the vegetative nervous system activity, and of the function of integration were studied both in patients in whom spontaneous remission occurred and in patients who were treated with insulin. By means of this closely integrated program it is anticipated that we shall obtain not only the above-mentioned information but also we shall be able later to assess insulin treatment more adequately, and shall also be able to obtain more precise information as to its underlying principle. Furthermore, data are being gathered at the same time in regard to what constitutes the most favorable type of case for treatment, and efforts are being made to establish objective indices of treatment. In this regard the relationship of the systolic-diastolic pressures

has previously been found to be much more rigid in schizophrenics than in normals, and we are investigating the question of whether this becomes modified as treatment progresses. Further studies of the changes which occur in the personality formation as clinical improvement or recession occurs are being carried out by Dr. Angyal. The delta index and the percentage of the time during which the alpha wave is present in the brain wave pattern are receiving further study by Drs. Hoagland and Rubin. The latter is also carrying out an extensive mapping program of the wave pattern shown by the schizophrenic brain, and in association with Dr. Angyal is endeavoring to map the areas of brain atrophy. The clinical picture presented by patients showing these areas of atrophy has already been reported by Dr. Angyal. The brain wave work has been much advanced by the acquisition of a two-channel apparatus and complete shielding of the experimental room.

Apart from the central projects, certain other investigations are being carried out. Dr. Cohen is investigating the recently introduced convulsive treatment of schizophrenia. His investigations not only include evaluation of the therapeutic aspects of the method in recent and chronically disturbed patients, but cover in addition the study of the effects of the drug used, metrazol, on memory and on cognition.

In September Dr. Francis H. Sleeper, who had been Resident Director of Research since the establishment of the department ten years ago, and to whose energy and capacity for organization the Research Department owes much of its present development, resigned to devote full time to his duties as Assistant Superintendent. He was succeeded by Dr. D. Ewen Cameron. At the same time the psychiatric group, which had been brought up to strength by the appointment of Dr. L. S. Chase and Dr. C. Wall, was established as a department under the direction of Dr. A. Angyal. Dr. Chase is engaged upon the study of the effects of vitamin B₁. Previous work in this department has shown that there is reason to suspect that the schizophrenic patient is deficient in O₂ catalysts, and consequently it is felt that a study of the action of known catalysts may well be significant. In addition he is conducting a study of doubt as it constitutes a factor in the schizophrenic psychosis. Dr. Wall is engaged upon an analysis of the personality factors in a group of patients who have been treated with insulin. The laboratories, under Dr. J. M. Looney, in addition to carrying on the extensive work on the O₂ metabolism and the vegetative nervous system involved in the central project and vitamin B₁ investigations, have attempted to establish methods of assaying certain of the endocrine products which are used in clinical investigations. The material in various dosages has been injected into sexually immature rats and the uterus, ovaries, and tubes weighed. The vagina is checked for histological findings. The testes, prostate, and epididymis of the male rats are also weighted. Variation is such that it is necessary to use more than five rats for each experiment in order to evaluate the results. At present the laboratory is working with animals of constant age and later will endeavor to run a series in which the weight factor is kept constant. Dr. Randall has just completed a preliminary report of brain chemistry studies which he has carried out in both normal controls and patients over a period of several years. Until now, comparatively little of an exact nature has been published in regard to this very important field. The Psychological Department, under Mr. Shakow, has taken an active share in the central project and in the B₁ studies. In addition, work has been carried out on the thinking of schizophrenics, and cooperative studies with other departments have been carried on. Dr. Rosenzweig has studied the personality effects of sex hormones in association with Dr. Hoskins, and Mr. Shakow and Dr. Rodnick have worked on the problem of integration in association with Dr. H. Freeman. Further studies of the value of the play technique as a means of approaching inaccessible patients were carried out by Mr. Shakow and Dr. Rosenzweig.

To the Biometric Department under Mr. Jellinek has fallen the task of integration and evaluation of the data afforded by the various research projects. The major analyses of data during the past year comprised brain chemistry data, brain wave data, insensible sweating, skin temperature, skin resistance, reaction time, adrenalin reactions, phytotoxic index, mitotic index, revision of the basal metabolic data, and the effects of social situations on the performance of schizophrenic patients. Special work was devoted to improvements in the analysis of variance

and to the comparability of the degrees of heterogeneity in two samples. At present the Department is much interested in theorems and techniques which can be applied to the evaluation of single individuals, and to expressions of total variability of an individual, as well as in other descriptive indices of the physiological status. Production of satisfactory methods of evaluation of progress and regression in individuals is of the greatest moment for further investigation, particularly of therapeutic agents. By this means it may be confidently anticipated that the errors which arise from subjectivism can be greatly reduced.

The papers published by the members of the Research Staff are incorporated in the complete list of publications from the hospital.

PUBLICATIONS FROM THE WORCESTER STATE HOSPITAL
December 1, 1936 — November 30, 1937

Books

1. *Administrative Psychiatry*. William A. Bryan. Published by W. W. Norton, New York, December 1936, 349 pp.
2. *Psychiatric Nursing*. Katherine McL. Steel. Published by F. A. Davis, Philadelphia, 1937, 370 pp.

Papers

1. *A pharmacodynamic study of the autonomic nervous system in normal men. The effects of intravenous injections of epinephrine, atropin, ergotamine and physostigmine upon the blood pressure and pulse rate.* Harry Freeman and Hugh T. Carmichael. *Jour. Pharm. & Exper. Ther.* 58: 409, December 1936.
2. *Estimates of intra-individual and inter-individual variation of the erythrocyte and leukocyte counts in man.* E. Morton Jellinek. *Human Biology* 8: 581, December 1936.
3. *Studies in seasonal variation of physiological functions. 1. The seasonal variations of blood cholesterol.* E. Morton Jellinek and Joseph M. Looney. *Biometric Bulletin* 1: 83, December 1936.
4. *The testing of certain hypotheses by means of lambda criteria with particular reference to physiological research. Part I. The drawing of one or more samples from completely or partially specified populations* John W. Fertig. *Biometric Bulletin* 1: 45, December 1936.
5. *The bilateral symmetry of skin temperature.* Harry Freeman, Forrest E. Linder and Ralph F. Nickerson. *Journal of Nutrition.* 13: 34, January 1937.
6. *The pressor effects of prolonged administration of glycerin extract of adrenal cortex.* R. G. Hoskins and J. H. Fierman. *Endocrinology* 21: 119, January 1937.
7. *Play technique in schizophrenia and other psychoses. I. Rationale. II. An experimental study of schizophrenic constructions with play materials.* Saul Rosenzweig and David Shakow. *Amer. Jour. Orthopsychiat.* 7: 32, Jan. 1937.
8. *Studies of Motor Function in Schizophrenia. II. Reaction Time.* Paul E. Huston, David Shakow and Lorrin A. Riggs. *Jour. Gen. Psych.* 16: 39, January 1937.
9. *Studies in the personality structure of schizophrenic individuals. I. The accessibility of schizophrenics to environmental influences. II. Reaction to interrupted tasks.* Maria Rickers-Ovsiankina. *Jour. Gen. Psych.* 16: 153, January 1937.
10. *An improved technic for the determination of insensible perspiration.* Ralph F. Nickerson. *Jour. Lab. & Clin. Med.* 22: 412, January 1937.
11. *Schools of Psychology: A Complementary pattern.* Saul Rosenzweig. *Phil. of Sci.* 4: 96, January 1937.
12. *The oxygen and carbon dioxide content of the arterial and venous blood of normal subjects.* Joseph M. Looney and E. Morton Jellinek. *Am. Jour. Physiol.* 118: 225, February 1937.
13. *Can the Biochemist produce life?* Joseph M. Looney, M.D., *Hormone* 19: 17, February 1937.

14. *Psychiatric manifestations associated with disease of the central nervous system with special reference to multiple sclerosis. A point of view.* Louis H. Cohen and Arthur J. Gavigan. *Jour. Nerv. & Ment. Dis.* 85: 266, March 1937.
15. *The clinical significance of numerical measures of scatter on the Stanford-Binet.* Albert J. Harris and David Shakow. *Psychological Bulletin*, 34: 134, March 1937.
16. *Electrical brain waves in schizophrenics during insulin treatments.* Hudson Hoagland, Morton A. Rubin and D. Ewen Cameron. *Jour. of Psych.* 3: 513, April 1937.
17. *Suprarenal cortex therapy in vomiting of pregnancy. II. The results in 78 cases.* William Freeman, J. M. Melick and D. D. McClusky. *Amer. Jour. Obs. & Gyn.* 33: 618, April 1937.
18. *A method for the study of concept formation.* Eugenia Hanfmann and Jacob Kasanin. *Jour. of Psych.* 3: 521, April 1937.
19. *These complex living cells.* Joseph M. Looney, M.D., *Science Digest* 1: May 1937.
20. *The effect of artificially raised metabolic rate on the electroencephalogram of schizophrenic patients.* Morton A. Rubin, Louis H. Cohen and Hudson Hoagland. *Endocrinology.* 21: 536, July 1937.
21. *The encephalograms of schizophrenics during insulin treatments* Hudson Hoagland, D. Ewen Cameron and Morton A. Rubin. *Amer. Jour. Psychiat.* 94: 183, July 1937.
22. *Some significant factors in juvenile recidivism.* Milton E. Kirkpatrick, M.D. *Jour. of Orthopsychiat.* 7: 349, July 1937.
23. *Mirror behavior in schizophrenic and normal individuals.* Saul Rosenzweig and David Shakow. *Jour. Nerv. & Ment. Dis.* 86: 166, August 1937.
24. *The "delta index" of the electro-encephalograms in relation to insulin treatments of schizophrenia.* Hudson Hoagland, D. Ewen Cameron and Morton A. Rubin. *Psych. Rec.* 1: 196, August 1937.
25. *The experimental study of psychoanalytic concepts.* Saul Rosenzweig. *Character and Personality* 6: 61, September 1937.
26. *Experiences in the insulin-hypoglycemia treatment of schizophrenia.* D. Ewen Cameron and R. G. Hoskins. *J. A. M. A.* 109: 1246, October 16, 1937.
27. *Some observations on Sakel's insulin-hypoglycemia treatment of schizophrenia* D. Ewen Cameron and R. G. Hoskins. *Schweizer Archiv. fur Neur. u. Psychiat.* 39: 180, October 1937.
28. *The effect of prolonged insulin therapy on glucose tolerance in schizophrenic patients.* Joseph M. Looney and D. Ewen Cameron. *Proc. Soc. Exp. Biol.* 37: 253, October 1937.
29. *The effect of pain on the heart rate of normal and schizophrenic individuals.* Louis H. Cohen and Mervin Patterson. *Jour. Gen. Psych.* 17: 273, October 1937.
30. *Disturbances of activity in a case of schizophrenia.* Andras Angyal, M.D. *Arch. Neur. & Psychiat.* 38: 1047, November 1937.
31. *The electro-encephalogram of schizophrenics during insulin hypoglycemia and recovery.* Hudson Hoagland, Morton A. Rubin and D. Ewen Cameron. *Amer. Jour. Physiol.* 120: 559, November 1937.
32. *A comparison of the performance of matched groups of schizophrenic patients, normal subjects and delinquent subjects on some aspects of the Stanford-Binet.* Charlotte Hall Altman and David Shakow. *Jour. Ed. Psych.* 28: 519, October 1937.

PSYCHOLOGY DEPARTMENT
David Shakow, M.A., Director

Statistically the records for the year indicate the following as to the patients and other subjects worked with in the Psychology Department.

Psychometric and Experimental Studies

<i>House</i>	<i>Individuals Examined</i>	<i>Tests Given</i>
House patients	216	732
Schizophrenia research patients	128	293
<i>Out-Patients</i>		
School clinics	370	435
Adult delinquents	16	51
Non-patients (inc. employees)	184	557
Total	914	2,068

Besides the routine psychometric work with patients the above figures include the work done with patients on various established research projects. Among these were the comparative reactions of schizophrenics and normal subjects to: situations involving aspiration; different length warning intervals in a reaction-time setting; startle stimulation in respect to adaptation as shown by the galvanic skin response, insensible perspiration and pulse rate; adrenalin and atropin as it effects the galvanic skin response; indistinct sound patterns as presented by the tautophone. The effects of sex hormones on the behavior and mental content of a patient studied daily is also included.

A number of other projects which are in earlier stages of development are, however, not included. Among these may be mentioned: a study of the relative abilities of schizophrenics and normal subjects to handle material in social, personal and impersonal settings; a revision of an optionary (type of questionnaire) to frustration reactions; a comparison of group and individual presentation of vocabulary tests.

The papers from the Department during the year were as follows:

A. *Published:*

All papers published from the Psychology Department for the year are included in the hospital list of publications.

B. *Accepted for Publication:*

1. Rosenzweig, S. and Shakow, D. *Mirror behavior in schizophrenic and normal individuals.* J. Nerv. & Ment. Dis. 1937.
2. Cohen, L. H. and Paterson, M. *Heart-rate reactions to pain stimulation.* J. Gen. Psychol. 1937.
3. Harris, A. J. and Shakow, D. *Scatter on the Stanford-Binet in schizophrenic, normal and delinquent adults* J. Abn. & Soc. Psychol. 1938.
4. Altman, C. H. and Shakow, D. *A comparison of the performance of matched groups of schizophrenic patients, normal subjects and delinquent subjects on some aspects of the Stanford-Binet.* J. Educ. Psychol. 1938.
5. Rickers-Ovsiankina, M. *The Rorschach test as applied to normal and schizophrenic subjects.* Brit. J. Med. Psychol. 1938.
6. Kasanin, J. and Hanfmann, E. *An experimental study of concept formation in schizophrenia. 1. Quantitative analysis of the results.* Am. J. Psychiat. 1938.
7. Shakow, D. and Goldman, R. *The effect of age on the Stanford-Binet vocabulary score of adults.* J. Educ. Psychol. 1938.
8. Hanfmann, E., Rickers-Ovsiankina, M. and Goldstein, K. *A psychological study of a case of post-traumatic dementia.* Brit. J. Med. Psychol. 1938.

C. *Prepared for Publication:*

1. Hanfmann, E. *A study of thinking in schizophrenia by means of the Healy P. C. II.*

D. *Read at meetings:*

1. Radlo, G. *Aspiration behavior in schizophrenic patients.* Meeting of Lewin psychologists, Harvard, December 1936.

2. Rosenzweig, S. *Application of experimental method to psychoanalysis*. Psychol. Colloquium of Brown & Yale Universities, January 1937.
3. Rosenzweig, S. *Frustration as a co-ordinating concept for experimental psychopathology* N. R. C. Conference on Experimental Neuroses, Washington, D. C. April, 1937.

Considerable progress has been made on the analysis of three extended studies, two on memory, one of normal subjects and the other on different diagnostic groups of psychotic subjects, and the other on the intellectual level of different groups of psychotic subjects as measured by the Stanford-Binet. An attempt was also made to integrate the results of the psychological studies of a period of some eight years. Although this was primarily done for a report for Dr. Gregg of the Rockefeller Foundation it was the basis of various reports and discussions at the hospital.

Dr. Rosenzweig has been carrying the major part of the teaching load outside the Department. He has, in the last year, given courses in psychology to our post-graduate nurses and to the nurses at Memorial Hospital.

Members of the Department attended various scientific meetings among which were the Lewin meetings in Cambridge, December 1936, the meeting of the American Orthopsychiatric Association in New York, February 1937, and the meeting of the American Psychological Association in Minneapolis, September, 1937.

On the whole, the year was a productive one from the standpoint of papers published and experimental projects completed. There is still a great deal of accumulated project material to be analyzed, however, and it is one of the main goals of the Department to make an even more concentrated attack upon this while continuing with the prosecution of new projects.

LIBRARY REPORT

George L. Banay, Ph.D., Librarian

I. Medical Library

The past year represents a year of further expansion in the history of the Medical Library. To indicate the activities and the progress in the development of the library, the following details are quoted:

Periodicals. — We had 117 periodicals in 1937 as compared with the 106 of the previous year. Of this number the hospital subscribed to 94, 2 were paid for by the Memorial Foundation for Neuro-Endocrine Research, 3 were donated by Dr. Bryan, 5 by Dr. Hoskins, 3 by Dr. Sleeper, 2 by Dr. Looney, 1 by Dr. William Freeman, and 7 come in free from scientific organizations.

Of these periodicals, 3 are in French, 6 in German, 4 in Italian, and 104 in English.

Circulation. — The Medical Library circulated 696 volumes last year.

Inter-Library Loans. — The Librarian maintained contact with other libraries, and we borrowed 164 volumes from 4 of these as follows: Boston Medical Library, 119; New York Academy of Medicine Library 35; Harvard College Library, 8; Harvard Medical School Library, 2.

Medical Library Association. — We maintained our membership in the Medical Library Association. This Association is of the greatest benefit to all medical libraries in supplying them with missing and out-of-print material for the nominal charge of the postage. In 1937 we received 78 volumes from the Association.

New Books. — Ninety-eight new volumes have been added to the shelves, some of them to the Child Guidance Clinic Library.

Binding. — We bound 275 volumes during the year, including the ones received from the Exchange.

Present State. — On November 30, 1937, the Medical Library had:

Bound volumes of periodicals	3,715
Unbound volumes of periodicals	56
Bound volumes of books	1,836
Unbound volumes of books	6
Old books	869
Catalogued pamphlets	1,269
Lantern slides	431

Total items 8,182

This is an increase of 353 volumes over the previous year.

Services. — The Librarian continued to circulate the bibliographies and abstracts prepared many special bibliographies, and translated foreign medical articles for the use of the Staff. The bibliographies, abstracts, and translations are filed in the Medical Library.

W. P. A. Projects. — We completed work on the 3 projects approved by the Federal Government, that is, re-cataloguing of books, compilation of a complete bibliography of schizophrenia, and bringing up to date our abstract collection on schizophrenia. The books are re-catalogued. The bibliography and abstract cards are typed and filed under subject headings.

II. General Library

The General Library was moved into new quarters in 1936. At the same time it was re-organized, the worn and obsolete material being eliminated. The shelves still look somewhat empty at the present time, but we shall build up the library systematically and hope to fill up the shelves in the not too remote future.

During 1937 one of the W. P. A. workers was in charge of the library and the Occupational Therapy students took the book trucks to the closed wards twice a week with books for the patients who were unable to come to the library.

We added 208 volumes to the shelves during the year.

On November 30, 1937, the General Library had:

Books (fiction and non-fiction)	2,103	Bibles and prayer books	25
Serials	67	Reference books	80
Bound magazines	168	Lantern slides	100
Total			2,543

Fifty popular magazines and 6 daily newspapers are subscribed to by the hospital.

In addition to this, 150 books are borrowed every 3 months from the Worcester Public Library to circulate among the patients and employees.

Arrangements have been made with the Free Public Library to send 100 volumes every 3 months to the Summer Street Department. In addition, 100 books are sent every 3 months from the general library in the main hospital, and 10 popular magazines and newspapers are subscribed to for this department.

The library is well patronized by patients and employees, the average monthly attendance being 922 patients and 70 employees.

During the year the library circulated 7,445 volumes and had 11,066 reading visitors.

A few churches of Worcester and the Free Public Library sent to us old books and magazines regularly. We express our thanks to all who have given books and magazines to the library.

CHAPLAIN'S DEPARTMENT *Carrol A. Wise, D.D., Chaplain*

The activities of the protestant Chaplain of this hospital fall conveniently under the headings of (1) religious services, (2) ward visitation, (3) education and (4) community service.

Religious services are held each Sunday morning at the main hospital and at the Summer Street Department. During the past year the attendance at these services has averaged well over three hundred. An endeavor is made to conduct a worship service which is milding stimulating, and in which a mental hygiene emphasis is made. A hymnal especially prepared for use in mental hospitals is used in this service. The sermon is brief, and seeks to indicate the value of religion for the emotional needs of the patients. These services offer one form of normal experience which many of the patients had on the outside of the hospital, and for which they feel a continuing need after admission to the hospital.

Routine visits are made to the admission wards so that all new patients are seen within a week after their admission to the hospital. The medical and other psychiatric wards are visited regularly, and individual patients are seen at any time when a visit is desired or indicated. Patients are frequently found who have unhealthy religious attitudes, and in whom a process of religious re-education may contribute to their general mental health.

The educational program of the chaplain's department centers chiefly in the training of theological students. In this work, the hospital is affiliated with the Council for the Clinical Training of Theological Students. While no actual training was done in this hospital during the past year, plans were made for developing this type of training into a six months rather than a three months course. The demand for such training on the part of seminaries and students is increasing, and its value is being increasingly appreciated in many sections of the church.

During the year the chaplain gave a series of four lectures on Religion and Mental Disorder to two groups of occupational therapy students, and to one group of nursing students, and another course of six lectures to another group of nursing students.

The community service of the chaplain consists largely in speaking before various groups on subjects related to the hospital and its work. During the past year the chaplain made thirty-five such talks. The Hospital Messenger, a paper primarily published for relatives, was issued monthly, partially under his supervision and editorship.

In September, 1937, the chaplain attended a conference on Christianity and Mental Hygiene which was sponsored by the National Committee on Mental Hygiene, the Federal Council of Churches, and the National Council on Religion in Higher Education. He is a member of the committee which is arranging for a similar conference during the coming year. In October he read a paper entitled "The Experience of Frustration in the Ministry", before the annual conference of the Council for the Clinical Training of Theological Students, in New York.

CHILD GUIDANCE CLINIC

Milton E. Kirkpatrick, M.D., Director

Treatment of the individual child whose behavior deviates significantly from that of his group has always been the primary objective of the Worcester Child Guidance Clinic. In reviewing the figures of this report, one will note a significant number of cases which were accepted on an advice basis. This does not represent any departure from our treatment program, but rather indicates the development of certain trends in this community which make it possible for persons other than those associated with the Child Guidance Clinic to do something for the child. There is an implication running through the mental hygiene movement to the effect that if physicians, nurses, teachers, and other professional groups become sufficiently indoctrinated with mental hygiene principles, we can expect eventually a diminution in the maladjustments of childhood. During the past three years more educational work with professional groups has been done in Worcester, not only by members of the staff of this Clinic, but by other agencies. It is now possible for agency workers who consult us about children to carry on intelligent treatment not directly under our close supervision.

Each year an attempt is made to discover the effects of Child Guidance Clinic procedure on certain selected groups of children, although no attempt has yet been made to evaluate what has happened to the total number of children seen during the past ten years. It is the opinion of the director that such research is valuable from two points of view. It makes a contribution to the general field of study of behavior problems in children and at the same time reveals the shortcomings as well as the strong points in our therapeutic approach. During the past year the following research projects were completed. The director published "Some Significant Factors in Juvenile Recidivism", which is a statistical evaluation of social and economic factors in the lives of first offenders. We also made an exhaustive analysis of a large series of cases referred to the Child Guidance Clinic by the Worcester Associated Charities. The findings of this research have pointed the way toward a better working relationship between the two agencies. We have always been confronted with the problem of the personality encountered in the mother as well as the personality of her child whom she brings to us for treatment. "A Retrospective Study of the Relationship Between Personality Characteristics of Mothers and the Outcome of Treatment" indicates that the capacity of the mother to carry out Clinic recommendations in spite of her previous shortcomings is the most important, single factor in her child's improvement. There has been an increasing number of adolescent children referred to the Clinic. We have also

completed a study, "The Relationship Between Adolescent Personality and Problem with Respect of the Outcome of Treatment". The findings, of course, are specific only to this Clinic, but they indicate very clearly the ability of an individual therapist to carry on successful treatment with a certain type of adolescent problem.

We are continuing to exert most of our efforts in community education in the direction of professional groups. During the past year an interesting project was undertaken in the public school system of Webster, Massachusetts. Four members of the Clinic staff have been going to Webster one afternoon a week, studying two cases and reporting their findings at a conference of the teachers later in the afternoon. This project has been very successful and has branched out until at the present time it includes the following: (1) a seminar on mental hygiene conducted once each month and attended by all the teachers in the public school system of Webster; (2) a mental testing program supervised by the psychologist at the Child Guidance Clinic and administered to groups of children by the teachers, which is the first attempt to provide such supervision in the Webster schools; (3) individual counseling, whereby teachers may consult with Clinic staff members about problems they encounter in the classroom; (4) monthly conferences on difficult cases which have been prepared for presentation by the teachers and school nurses with the assistance of Clinic staff members. It has been the purpose of this co-operative relationship with the Webster schools to make them aware of the existence of mental hygiene and child guidance problems, and at the same time show them what they, as teachers and nurses, can do about it.

Community support continues to be very fine, financially as well as in other less tangible ways. We have more children referred than we can adequately care for. A conscientious attempt is made to select those cases with which we can be successful and whenever possible to refer the remainder to other sources wherein they might find some alleviation for the presenting problem. The physical aspects of the clinic are quite good. During the coming year we anticipate no changes in either our organization or our general method of procedure.

Service Report

I. *Report of Case Load:*

		Total
A. Carried Cases:		
1. Cases carried over from last year	. . . . .	318
2 Intake a. New cases accepted	. . . . .	227
b. Old cases reopened		
(1) last closed before present year	. . . . .	7
(2) last closed within present year	. . . . .	3
3. Total cases open at sometime in this year.	. . . . .	555
4. Cases taken from service	. . . . .	268
5. Cases carried forward to next year	. . . . .	287
B. Closed cases followed up (Not reopened)	. . . . .	0
C. Applications rejected	. . . . .	10
D. Applications withdrawn	. . . . .	15

II. *Type of Service Classification*

A. New Accepted Cases:		
6. Full service a. Clinic staff cases	. . . . .	124
b. Cooperative cases	. . . . .	103
c. Full service not a or b	. . . . .	0
7. Special service (Advice)	. . . . .	0
9. Total new cases accepted	. . . . .	227
B. Cases taken from Service:		
10. Full service a. Clinic staff cases	. . . . .	98
b. Cooperative cases	. . . . .	164
11. Special service (advice)	. . . . .	6
12. Total cases closed during this year	. . . . .	268

III. Sources Referring New Accepted Cases:

	Full	Special	Total
13. Agencies a. Social	48	3	51
b. Medical	2	2	4
14. Schools a. Public	6	1	7
b. Private	—	1	1
15. Juvenile Court	—	72	72
16. Private physicians	5	—	5
17. Parents, relatives	77	10	87
18. Total new cases accepted	138	89	227

IV. Summary of Work With or About Patients:

A. By Psychiatrists:

	Total
1. Interviews with patients a. for examination	294
b. for treatment	748
2. Interviews about patients	237
3. Physical examinations by clinic staff members	46

B. By Psychologists:

1. Interviews with patients a. for examination	261
b. for re-examination	9
c. for treatment	624
2. Interviews about patients	39

C. By Social Workers:

1. Interviews in clinic	1,104
2. Interviews outside clinic	579
3. Telephone calls	297

D. Number of Cases given initial Staff Conference:

1. Full service a. Clinic staff cases	45
b. Cooperative cases	30
2. Special service	3

E. Number of open cases given service during year by working, approx. 600

F. Referral Interviews 132

V. Personnel Report (Average staff during year):

	Full-time	Part-time
A. Regular Staff a. Psychiatrist	2	
b. Psychologists	2	
c. Social workers	3	
d. Clerical workers	2	1
B. Staff in Training a. Social workers	4	

VI. Operating Schedule

A. Schedule of clinic days and hours: 9 to 5 daily; 9 to 12 Saturday.

B. Schedule of attendance of psychiatrists: 9 to 5 daily; 9 to 12 Saturday.

THE STEWARD'S DEPARTMENT

Herbert W. Smith, Steward

This Department has functioned during the fiscal year 1937 without any unusual developments. Again we bring to light the absolute necessity of proper storeroom and laundry accommodations if the work of this hospital is to go on successfully. Each year adds to the demands set upon these two vital parts of the Steward's department and it is to be hoped that the necessity for prompt action to change present conditions will be recognized in the near future.

Our present storeroom facilities are not adequate to properly handle the material a hospital of this size demands, either for proper storage or quantities to be kept on hand. This necessitates a duplication of orders at shorter intervals than should be which in turns adds to the clerical work of storeroom accounting. Therefore, viewed from all angles, a relocation of our present storeroom is badly needed if a reasonable degree of efficiency is to be maintained.

So much has already been written and spoken about the laundry connected with this hospital that there is little left to comment on. The physical condition of the plant is not improving and it is remarkable that the machinery is standing up the way that it is. The possibility of a bad breakdown increases with each days use.

Working conditions are far from satisfactory and it is conceded by all those who should know that a new laundry, both building and machinery, is needed to meet the demands of this hospital.

It is to be hoped that something can be done during 1938 to correct both the storeroom and laundry conditions in the Worcester State Hospital.

FARM REPORT

James Mistark, Head Farmer

The motorization of the farm has continued during the past year. The number of horses has been reduced to two and a I-12 and two F-12 tractors were added to the equipment. This has enabled the farm to increase the acreage by the development of new land. An area of approximately eight acres has been added to the land under cultivation. This new land will be used to produce green hay the first part of the season of 1938 and later will be planted with garden crops.

One new and one rebuilt silo were added to the dairy barn this year. Ensilage is an important factor in keeping the milk production on a constant level. When only green feed is used the flow of milk becomes irregular. The ensilage can be used during the first six months of 1938 and will mean a considerable saving in purchased feed such as beet pulp and hay.

With the addition of the silos the acreage of land used for the production of hay can be reduced. This will permit a better rotation of crops. Old hay land can be given a rest through plowing and cropping it with turnips. Such land will probably give a heavy yield. Proper rotation means better production on a smaller area and relative freedom from weeds. This farm has always been troubled by the weed problem but the prospects are better for a clean and weed-free land through such a system of crop rotation.

One of the important improvements made during the year is the installation of the first section of an irrigation system. The control of moisture will undoubtedly permit a greater crop production with a smaller area and such crops can be brought to maturity from 10 to 15 days earlier with artificial irrigation than under Nature's system of watering. It is planned to continue the installation of sections of the system until the entire garden area is so treated.

One of the problems that confronts every head farmer in a mental hospital is the question of reconciling the occupational and industrial therapy for patients with the need for continued production. Certain demands are laid upon the farm for food production and at the same time there is a demand for patient occupation. The farm personnel has accepted both responsibilities during the year and it is my opinion that these two points of view can be adequately met by constantly impressing upon those who are in charge of farm work as well as those who are in charge of patients, the necessity for properly teaching each patient to work efficiently. It is my observation that work carried on in an orderly, systematic manner with the patient carefully instructed in the best way to work with a minimum amount of exertion, is better treatment than work which is performed according to the peculiar ideas of the individual patient. Work planned in this way improves efficiency and speeds up production.

ENGINEER'S REPORT

Warren G. Proctor, Chief Engineer

Four major changes have taken place at the power plant during the last year: Structural changes; electrical modernization; new type of refrigeration; addition and replacement of steam equipment.

The structural changes consisted of raising the roof of the old boiler room, roofing over the old coal pocket, removing the old square chimney, building a new engine room in the old boiler room, partitioning the old coal pocket into four rooms, one for oil storage tanks, one for coal storage, a utility room and a small coal preparation room.

The old machine shop was divided into three rooms, one room to house the new boiler, feed water heater and receiving tank, another room for a new engineer's office which overlooks the boiler room and engine room, and the rest of the space for switch-board and electrical controls.

The new plant is now very compact. A new cement floor has been laid in the boiler room and steel stairs and walks over the boilers which will make all parts of the room easily accessible.

Electrical modernization. — Consisted of changing from direct to alternating current.

Three new generators were installed each one of which is capable of generating as much current as our six old generators. These generators are connected by gears to turbines except one which is directly connected to an engine.

All motors throughout the hospital have been replaced except in the laundry which are now supplied with direct current from a motor generator set.

Electric clocks are being installed which will be operated by the new current.

By means of transformers the current can be sent longer distances without drop in voltage which has made it possible to supply the farm group and also the cottages on Belmont Street from our plant.

All wires in the sub basements are now in conduit which is much neater in appearance and eliminates a fire hazard.

Much more electrical equipment can now be installed at the hospital at less expense to the State due to the adoption of alternating current.

Due to the installation of new wires in conduit several leaks have been eliminated where the current had been discharging into the ground.

New type of refrigeration. — Our old refrigeration system was very inefficient, a large amount of power being necessary to produce the required results.

Five small electrically driven compressors with automatic controls are now doing the work.

A new type of refrigerant "freon" has been used in place of anhydrous ammonia, the new gas is odorless and therefore much more safe than ammonia and due to this fact it can be used direct to the ice boxes.

The cooling units are now placed in the top of the ice boxes instead of on the sides and this allows for more storage space.

As there are several machines it is possible to operate boxes at controlled temperatures over a wider range for instance, meat boxes will be kept at 32° F while vegetable boxes will be kept at 40° F and ice making tanks at 10° F. Great care has been taken to prevent the loss of gas, all joints are sealed and the operating cost of the new units should be much lower than with the old equipment.

Many additions and changes have been made to the *steam generating equipment* by the installation of a new five hundred horse power boiler, boiler feed water heater, new boiler feed pump, circulating pumps for return water, and oil burners.

For the first time in many years the hospital has ample boiler capacity, this insures steady heat, light and power, with one or more boilers ready for service at any time.

As a result of the installation of this new equipment we have been able to release twenty patients who have been wheeling in coal and removing ashes.

The allowable working pressure of the boilers has been raised from 110 to 150 lbs. New steam pipes from boilers to engines and turbines have been installed and the loop system used which will enable the operators to remove pressure from certain sections of the steam pipe for purposes of change or repair without interruption of service.

Two new hot water tanks for domestic supply to the hospital have been placed in the utility room. These tanks are copper lined and are equipped with twice the heating capacity of our old tanks.

Two turbines and one engine have been installed to drive generators. These units are very compact and will use much less steam than our old units while generating an equal amount of current.

The educational program has been continued, several men are studying for higher licenses and one man, Mr. Harney passed the examination for second class fireman.

REPORT OF MAINTENANCE DEPARTMENT

Anton Svenson, Maintenance Foreman

The maintenance and repair work of a mental hospital can be classified under several headings: —

1. The ordinary day by day work of making the small repairs of the hospital. This is a never ending task.
2. Carrying out larger construction projects which represent radical changes made in the interest of increased efficiency.
3. Supervising projects which are being built under special appropriations granted by the legislature.
4. Inspection of work being done by contractors to see that the specifications are complied with.

The ordinary maintenance repair work has been carried on during the year as rapidly and completely as the limited mechanical personnel permitted. The upkeep of buildings from sixty to more than one hundred years old which are occupied by mental patients many of whom are deliberately destructive means more in time, money and labor than would be the case in an ordinary building. During the year the painters replaced 6,000 panes of glass. We used 5,000 feet of window cord, 500 gross of screws and 25 kegs of nails. All of this material went into the routine maintenance of the building.

The painting program has been increased through W. P. A. labor. Fifteen wards have been completely redecorated and the work will proceed at the same rate in 1938.

The range of special maintenance projects carried on during the year is a wide one. Many of them occupied the time of one or two men for two or three days but in the aggregate they make up a tremendous total.

Special projects during the year were the renovation of the Quinby wards and rebuilding the porch on the administration building. These were carried out with outside labor but under the direction of the maintenance foreman.

The establishment of better stock storage facilities has resulted in a considerable saving. The stock man is now directly in charge of the foremen and the stock for each job is issued directly by him. This system will later be extended to include a system of planning and dispatching the work and the incorporation of a simple cost system which will facilitate budget preparation.

VALUATION

November 30, 1937

REAL ESTATE

Land, 584.95 acres	\$389,507.00
Buildings and Betterments	2,548,944.53
	<hr/>
	\$2,938,451.53

PERSONAL PROPERTY

Travel, transportation and office expenses	\$9,429.76
Food	13,984.07
Clothing and materials	27,664.50
Furnishings and household supplies	285,710.14
Medical and general care	67,672.31
Heat and other plant operation	3,848.39
Farm	51,018.72
Garage and grounds	10,014.82
Repairs	20,769.96
	<hr/>
	\$490,112.67

SUMMARY

Real estate	\$2,938,451.53
Personal property	490,112.67
	<hr/>
	\$3,428,564.20

FINANCIAL STATEMENT

To the Department of Mental Diseases:

I respectfully submit the following report of the finances of this institution for the year ending November 30, 1937.

STATEMENT OF EARNINGS

Board of Patients	\$71,597.26
Personal Services	275.59
Sales:	
Food	\$2,248.19
Clothing and materials	45.80
Furnishings and household supplies	73.05
Medical and general care	107.66

Heat and other plant operations	84.00	
Garage and grounds	.50	
Repairs ordinary	310.90	
Farm (horses and harness, \$26; cows, calves and pigs, \$605.03; hides, \$98.95; vegetables and tools, \$78.50)	808.48	
Total Sales		3,678.58
Miscellaneous:		
Interest on bank balances	\$137.50	
Rents	1,496.09	
Soil conservation	276.00	
Tel. Com. (\$116.80) Misc. (\$65.38)	182.18	
Total Miscellaneous		2,091.77
Total earnings for the year		\$77,643.20
Total cash receipts reverting and transferred to the State Treasurer		\$77,617.70
Accounts receivable outstanding December 1, 1936	\$29.50	
Accounts receivable outstanding November 30, 1937	55.00	
Accounts receivable increased		\$25.50
MAINTENANCE APPROPRIATION		
Balance from previous year, brought forward		\$25,595.37
Appropriation, current year		1,079,887.00
Total		\$1,105,482.37
Expenditures as follows:		
Personal services	\$594,944.61	
Food	198,811.60	
Medical and general care	42,530.98	
Religious instruction	2,960.00	
Farm	28,945.88	
Heat and other plant operation	92,949.36	
Travel, transportation and office expenses	10,385.41	
Garage and grounds (garage, \$6,341.15; grounds, \$657.91)	6,999.06	
Clothing and materials	21,540.86	
Furnishings and household supplies	37,339.94	
Repairs ordinary	16,442.32	
Repairs and renewals	15,940.55	
Total maintenance expenditures		\$1,069,790.57
Balances of maintenance appropriation, November 30, 1937		35,691.80
		\$1,105,482.37
SPECIAL APPROPRIATIONS		
Balance December 1, 1936, brought forward		\$317,726.07
Appropriations for current year		9,000.00
Total		\$326,726.07
Expended during the year (see statement below)	\$242,464.65	
Reverting to Treasury of Commonwealth (Star balances below that are reverting) *	229.63	
		\$242,694.28
Balance November 30, 1937, carried to next year		\$84,031.79

APPROPRIATION	Project and Chap. Acts	Total Amount Appropriated	Expended during fiscal year	Total Expended to date	Balance at end of year
Alterations for fire protection, M.S.P.M.-20, PWA D. 6243		\$89,404.87	—	\$89,404.87	—
Standpipe, M.S.P.M.-39, PWA D. 4640		40,966.13	—	40,966.13	—
Fireproof balconies, M.S.P.M.-48, PWA D. 4465		109,765.03	\$59.92	109,765.03	—
Sprinklers and rewiring, M.S.P. M.-49, PWA D. 5308		115,138.38	1,140.75	115,138.38	—
Hydrotherapy building, M.S.P. M.-50, PWA D. 4657		127,173.41	14,722.37	126,304.92	\$868.49
Window calking and weather strip	249-1935	5,000.00	3,172.07	4,777.82	222.18*
Roof repairs	249-1935	7,700.00	—	7,697.38	2.62*
Quimby Ward building renovation	249-1935	18,000.00	3,000.62	17,995.17	4.83*
Mechanical refrigeration	249-1935	14,400.00	4,543.32	4,543.32	9,856.68
Porch — Administration building	304-1936	5,500.00	5,147.83	5,148.50	351.50
Plumbing — Summer St. Hospital	304-1936	12,300.00	6,554.88	12,237.86	62.14
New boilers, stokers, etc.	304-1936	270,000.00	204,122.89	206,107.02	63,892.98
Fire alarm system	304-1936	9,000.00	—	—	9,000.00
		\$824,347.82	\$242,464.65	\$740,086.40	\$84,261.42
*Less Reverted					229.63
					\$84,031.79

PER CAPITA

During the year the average number of patients has been, 2,453.1.
 Total cost of maintenance, \$1,069,790.57.
 Equal to a weekly per capita cost of (52 weeks to year) \$8.3864.
 Total receipts for the year, \$77,617.70.
 Equal to a weekly per capita, \$.6084.
 Total net cost of maintenance for year, \$992,172.87
 Net weekly per capita, \$7.778.

Respectfully submitted,

MARGARET T. CRIMMINS,

Treasurer.

Financial statement verified.
 Approved

GEO. E. MURPHY,
Comptroller.

STATEMENT OF FUNDS

November 30, 1937

PATIENTS' FUND			
Balance on hand November 30, 1936		\$8,884.71	
Receipts		9,244.44	
Interest		137.50	
		<hr/>	
			\$18,266.65
Expended		\$10,932.59	
Interest paid to State Treasurer		137.50	
		<hr/>	
			11,070.09
			<hr/>
			\$7,196.56
Investments			
Worcester County Institution for Savings		\$1,000.00	
Worcester Five Cents Savings Bank		1,000.00	
Worcester Mechanics Savings Bank		1,000.00	
Peoples Savings Bank		1,000.00	
Bay State Savings Bank		1,000.00	
Worcester Depositors Corp. (Class A Cert.)		70.00	
Balance Mechanics National Bank		1,904.15	
Cash on hand December 1, 1937		222.41	
		<hr/>	
			\$7,196.56
CANTEEN FUND			
Balance on hand November 30, 1936		\$892.80	
Receipts		20,806.75	
		<hr/>	
			\$21,699.55
Expended			20,740.95
			<hr/>
			\$958.60
Cash on hand November 30, 1937			
Investments			
Worcester Depositors Corp. (Class A Cert.)		\$112.00	
Mechanics National Bank		702.40	
Cash on hand November 30, 1937		144.20	
		<hr/>	
			\$958.60
WHEELER FUND			
Balance on hand November 30, 1936		\$1,029.42	
Income		25.00	
		<hr/>	
			\$1,054.42
Investments			
Worcester Mechanics Savings Bank		\$1,000.00	
Balance Mechanics National Bank		54.42	
		<hr/>	
			\$1,054.42
CLEMENT FUND			
Balance on hand November 30, 1936		\$1,000.00	
Income		25.00	
		<hr/>	
			\$1,025.00
Expended			25.00
			<hr/>
			\$1,000.00
Balance on hand November 30, 1937			
Investments			
Worcester County Institution for Savings			\$1,000.00
LEWIS FUND			
Balance on hand November 30, 1936		\$1,335.97	
Income		32.50	
		<hr/>	
			\$1,368.47
Investments			
Worcester Five Cents Savings Bank		\$1,300.00	
Balance Mechanics National Bank		68.47	
		<hr/>	
			\$1,368.47
MANSON FUND			
Balance on hand November 30, 1936		\$1,087.09	
Income		25.12	
		<hr/>	
			\$1,112.21
Investments			
Millbury Savings Bank		\$1,111.38	
Balance Mechanics National Bank		.83	
		<hr/>	
			\$1,112.21

ROCKEFELLER RESEARCH PROJECT

Balance on hand November 30, 1936	\$2,501.12	
Receipts to November 30, 1937	15,403.29	\$17,904.41
Expended to November 30, 1937		16,048.11
Balance on hand November 30, 1937		\$1,856.30
Worcester County Trust Co.	<i>Investments</i>	\$1,856.30
Check Received March 10, 1937	\$1,000.00	
Expended	994.46	
Balance on hand November 30, 1937		\$5.54
Worcester County Trust Co.	<i>Investments</i>	\$5.54

STATISTICAL TABLES

AS ADOPTED BY THE AMERICAN PSYCHIATRIC ASSOCIATION PRESCRIBED BY
THE MASSACHUSETTS DEPARTMENT OF MENTAL DISEASES

TABLE 1. *General Information*

(Data correct at end of institution year November 30, 1937)

Date of opening as a hospital for mental diseases: January 18, 1833.	
Type of hospital: State.	
Hospital plant:	
Value of hospital property:	
Real estate, including buildings	\$2,993,514.52
Personal property	490,112.67
Total	\$3,483,627.19

Total acreage of hospital property owned, 589.16.

Additional acreage rented, 75.

Total acreage under cultivation during previous year, 177.

PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE
550. 4-38. Order 3761.

Officers and employees:

	Actually in Service at End of Year			Vacancies at End of Year		
	M.	F.	T.	M.	F.	T.
Superintendents	1	—	1	—	—	—
Assistant physicians	11	1	12	2	—	2
Clinical assistants	2	—	2	—	—	—
Total physicians	14	1	15	2	—	2
Stewards	1	—	1	—	—	—
Resident dentists	1	—	1	—	—	—
Pharmacists	1	—	1	—	—	—
Graduate nurses	5	72	77	—	2	2
Other nurses and attendants	138	156	294	—	—	—
Occupational therapists	—	4	4	—	1	1
Social workers	—	3	3	—	1	1
All other officers and employees	141	86	227	7	1	8
Total officers and employees	301	322	623	9	5	14

Classification by Diagnosis, September 30, 1937

Census of Patient Population at end of year:

	Actually in Hospital			Absent from Hospital but still on Books		
	M.	F.	T.	M.	F.	T.
WHITE						
Insane	1,115	1,156	2,271	228	251	479
Mental defectives	—	3	3	—	1	1
All other cases	1	3	4	—	6	6
Total	1,116	1,162	2,278	228	258	486
OTHER RACES:						
Insane	26	29	55	2	1	3
Mental defectives	—	1	1	—	—	—
Total	26	30	56	2	1	3
Grand Total	1,142	1,192	2,334	230	259	489

	M.	F.	T.
Patients under treatment in occupational-therapy classes, including physical training, on date of report	108	273	381
Other patients employed in general work of hospital on date of report	561	483	1,044
Average daily number of all patients actually in hospital during year	1,160.43	1,181.48	2,341.91
Voluntary patients admitted during year	9	2	11
Persons given advice or treatment in out-patient clinics during year	165	120	285

TABLE 2. *Movement of Patient Population for the Year Ended September 30, 1937*
(Data in all of the following tables are based on the Statistical Year, October 1, 1936 to September 30, 1937)

	TOTAL			REGULAR COURT COMMITMENT (INSANE)			OBSERVATION			TEMPORARY			VOLUNTARY		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Patients on books of institution September 30, 1936	1,362	1,425	2,787	1,352	1,423	2,775	8	2	10	-	-	-	2	-	2
Admissions during year:															
First admissions	313	227	540	237	185	422	63	31	94	7	10	17	6	1	7
Readmissions	127	90	217	109	79	188	12	9	21	3	1	4	3	1	4
Total admissions	440	317	757	346	264	610	75	40	115	10	11	21	9	2	11
Transfers from other mental hospitals	15	28	43	15	28	43	-	-	-	-	-	-	-	-	-
Total received during year	455	345	800	361	292	653	75	40	115	10	11	21	9	2	11
Total on books during year	1,817	1,770	3,587	1,713	1,715	3,428	83	42	125	10	11	21	11	2	13
Discharged from books during year:															
As recovered	89	45	134	72	39	111	16	5	21	1	1	2	-	-	-
As improved	74	93	167	65	90	155	6	2	8	-	1	1	3	-	3
As unimproved	22	14	36	18	10	28	2	2	4	2	2	4	-	-	-
As without psychosis	65	36	101	3	4	7	50	26	76	4	4	8	8	2	10
Total discharged to community	250	188	438	158	143	301	74	35	109	7	8	15	11	2	13
Transferred to other mental hospitals	25	17	42	25	17	42	-	-	-	-	-	-	-	-	-
Died during year	170	114	284	159	105	264	8	6	14	3	3	6	-	-	-
Total discharged, transferred and died during year	445	319	764	342	265	607	82	41	123	10	11	21	11	2	13
Patients remaining on books of hospital at end of year:															
In hospital	1,142	1,192	2,334	1,141	1,191	2,332	1	1	2	-	-	-	-	-	-
On parole	230	259	489	230	259	489	-	-	-	-	-	-	-	-	-
On parole or otherwise absent	1,372	1,451	2,823	1,371	1,450	2,821	1	1	2	-	-	-	-	-	-
Total															

SUPPLEMENTARY DATA

	Average daily number of patients on books during year	Males	Females	Total
Actually in institution during year		1,372.00	1,441.64	2,813.64
In family care		1,160.43	1,181.48	2,341.91
On visit		28.66	84.25	112.91
On escape		175.91	174.91	350.82
Number of patients actually remaining in institution September 30, 1937:		7.00	1.00	8.00
State				
Reimbursing		1,072	1,074	2,146
Ex-service patients paid by Federal Government		70	118	188
Number of patients in family care September 30, 1937:				
State		26	82	108
Private		18	58	76
Number of non-insane patients in hospital at end of institution year:		8	24	32
Mentally defective				
Others		1	3	4

TABLE 3. *Nativity of First Admissions and of Parents of First Admissions*

NATIVITY	PATIENTS			PARENTS OF MALE PATIENTS			PARENTS OF FEMALE PATIENTS		
	M.	F.	T.	Fathers	Mothers	Both Parents	Fathers	Mothers	Both Parents
United States ¹	210	135	345	101	101	87	54	60	47
Austria	3	—	3	3	3	3	—	—	—
Canada ²	31	28	59	59	59	48	37	40	33
China	—	—	—	1	1	1	—	—	—
Czecho-Slovakia	—	1	1	—	—	—	1	1	1
England	6	7	13	9	8	7	13	8	8
Finland	2	3	5	3	3	3	4	4	4
France	1	—	1	—	—	—	—	—	—
Germany	1	—	1	3	2	2	1	1	1
Greece	2	—	2	2	2	2	1	1	1
Holland	—	1	1	—	—	—	1	1	1
Ireland	11	21	32	45	40	37	40	37	34
Italy	8	6	14	14	15	14	12	11	11
Norway	—	1	1	—	—	—	2	1	1
Poland	4	5	9	8	7	7	10	10	10
Portugal	—	1	1	—	—	—	1	1	1
Russia	5	1	6	12	13	11	4	4	4
Scotland	2	3	5	3	5	3	4	4	3
Spain	—	—	—	—	—	—	1	1	1
Sweden	14	6	20	18	19	18	9	10	9
Turkey in Asia	4	1	5	3	3	3	—	—	—
Wales	—	—	—	—	—	—	—	1	—
Other Countries	9	6	15	14	15	13	9	9	9
Unknown	—	1	1	15	17	12	23	22	20
Total	313	227	540	313	313	271	227	227	199

¹(Persons born in Hawaii, Porto Rico and the Virgin Islands should be recorded as born in the U. S.)²Includes Newfoundland.

TABLE 5. *Citizenship of First Admissions*

	M.	F.	T.
Citizens by birth	210	135	345
Citizens by naturalization	42	11	53
Aliens	26	25	51
Citizenship unknown	35	56	91
Total	313	227	540

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses*

RACE	Total			With syphilitic meningo-encephalitis			With other forms of syphilis			With other infectious diseases			With Alcoholic psychoses			Due to drugs, etc.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black)	3	3	6	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Armenian	5	2	7	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Chinese	1	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-
Dutch and Flemish	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
English	15	15	30	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
Finnish	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
French	39	32	71	6	-	6	-	-	-	1	-	1	6	-	6	-	-	-
German	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greek	4	2	6	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Hebrew	12	4	16	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Irish	57	40	97	4	-	4	-	-	-	-	-	-	7	-	7	-	-	-
Italian ¹	15	12	27	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Lithuanian	9	-	9	1	1	2	-	-	-	-	-	-	2	1	3	-	-	-
Portuguese	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scandinavian ²	18	9	27	1	-	1	-	-	-	-	-	-	1	-	1	-	-	-
Scotch	5	4	9	1	-	1	-	-	-	-	-	-	1	1	2	-	-	-
Slavonic ³	8	14	22	-	-	-	-	-	-	-	-	-	3	-	3	-	-	-
Other specific races	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed	108	65	173	8	1	9	-	-	-	2	-	2	10	-	10	2	1	3
Race unknown	9	10	19	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Total	313	227	540	29	2	31	1	-	1	3	-	3	31	2	33	2	1	3

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses* — Continued

RACE	Traumatic psychoses			With cerebral arterio-sclerosis			With other disturbances of circulation			With convulsive disorders (epilepsy)			Senile psychoses			Invol- tional psychoses		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black)	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Armenian	-	-	-	1	-	1	-	-	-	-	-	-	-	1	1	-	-	-
Dutch and Flemish	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
English	-	-	-	5	5	10	-	-	-	-	-	-	2	2	4	-	-	-
Finnish	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
French	-	-	-	4	7	11	1	1	2	-	-	-	5	3	8	1	-	-
German	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Greek	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Hebrew	-	-	-	1	-	1	-	-	-	-	-	-	1	-	1	-	-	-
Irish	-	-	-	11	14	25	3	-	3	-	-	-	1	12	13	4	-	4
Italian ¹	1	-	1	1	1	2	-	-	-	-	-	-	1	1	2	-	-	-
Lithuanian	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2	2
Portuguese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scandinavian ²	-	-	-	4	-	4	3	1	4	-	-	-	1	3	4	-	1	1
Scotch	-	-	-	2	-	2	-	-	-	-	-	-	-	1	1	-	1	1
Slavonic ³	-	-	-	-	1	1	1	-	1	-	-	-	-	1	1	-	1	1
Other specific races	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed	-	-	-	27	16	43	1	1	2	1	2	3	1	2	3	1	2	3
Race unknown	-	-	-	-	5	5	3	-	3	-	-	-	2	1	3	-	-	-
Total	1	-	1	57	53	110	12	3	15	1	2	3	13	27	40	6	7	13

¹Includes "North" and "South".²Norwegians, Danes and Swedes.³Includes Bohemian, Bosnian, Croatian, Dalmatian, Herzegovinian, Montenegrin, Moravian, Polish, Russian, Ruthenian, Servian, Slovak, Slovenian.

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses — Continued*

RACE	Due to other metabolic diseases, etc.			Due to new growth			With organic changes of nervous system			Psycho-neurosis			Manic-depressive system			Dementia praecox		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black)	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Armenian	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	2	1	3
Dutch and Flemish	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
English	1	—	1	—	—	—	—	—	—	1	1	—	2	2	—	1	3	4
Finnish	—	1	1	1	—	1	—	—	—	—	—	—	1	1	—	2	2	4
French	—	—	—	—	—	—	1	—	1	1	1	2	2	—	2	6	14	20
German	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2
Greek	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Hebrew	—	—	—	—	—	—	—	—	—	2	—	2	—	1	1	4	3	7
Irish	3	3	6	—	—	—	—	—	—	1	2	3	1	2	3	9	6	15
Italian ¹	—	—	—	—	—	—	—	—	—	—	2	2	2	2	4	6	3	9
Lithuanian	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	2	—	2
Portuguese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Scandinavian ²	1	—	1	—	—	—	—	—	—	2	—	2	—	1	1	3	1	4
Scotch	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Slavonic ³	1	—	1	—	—	—	—	—	—	1	1	2	—	—	—	1	3	4
Other specific races	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mixed	1	2	3	—	—	—	1	1	2	5	—	5	4	8	12	19	21	40
Race unknown	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	1	4	5
Total	9	6	15	2	—	2	2	1	3	12	8	20	9	17	26	58	65	123

TABLE 6. *Race of First Admissions Classified with Reference to Principal Psychoses — Concluded*

RACE	Paranoia and paranoid conditions			With psychopathic personality			With mental deficiency			Undiagnosed psychoses			Without psychoses			Primary behavior disorders		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
African (black)	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—
Armenian	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chinese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dutch and Flemish	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—
English	2	1	3	1	—	1	—	—	—	—	—	—	2	1	3	—	—	—
Finnish	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
French	—	—	—	—	—	—	—	1	1	—	—	—	5	5	10	—	—	—
German	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Greek	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Hebrew	—	—	—	1	—	1	—	—	—	—	—	—	1	—	1	—	—	—
Irish	1	—	1	1	—	1	—	—	—	1	—	1	10	1	11	—	—	—
Italian ¹	—	—	—	—	—	—	—	—	—	—	—	—	4	3	7	—	—	—
Lithuanian	1	—	1	—	—	—	—	1	1	—	—	—	3	—	3	—	—	—
Portuguese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scandinavian ²	1	—	1	—	—	—	—	1	1	—	—	—	1	1	2	—	—	—
Scotch	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—
Slavonic ³	—	1	1	—	—	—	1	1	2	—	—	—	—	5	5	—	—	—
Other specific races	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Mixed	4	—	4	—	—	—	3	—	3	—	—	—	17	7	24	1	1	2
Race unknown	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Total	10	2	12	4	—	4	4	5	9	1	—	1	45	25	70	1	1	2

¹Includes "North" and "South".²Norwegians, Danes and Swedes.³Includes Bohemian, Bosnian, Croatian, Dalmatian, Herzegovinian, Montengerin, Moravian, Polish Russian, Ruthenian, Servian, Slovak, Slovenian.

TABLE 7. Age of First Admissions Classified with Reference to Principal Psychoses

PSYCHOSES	TOTAL			0-14 years			15-19 years			20-24 years			25-29 years			30-34 years			35-39 years			40-44 years		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	29	2	31	-	-	-	-	-	-	-	-	-	1	1	-	3	-	-	4	-	-	3	1	4
With other forms of syphilis	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With other infectious diseases	3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcoholic psychoses	31	2	33	-	-	-	-	-	-	-	-	-	1	1	2	6	-	-	3	-	-	4	-	1
Due to drugs, etc.	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-
Traumatic psychoses	1	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
With cerebral arteriosclerosis	57	53	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With other disturbances of circulation	12	3	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With convulsive disorders (epilepsy)	1	27	28	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	1	-	-	-	-
Senile psychoses	13	2	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Evolutional psychoses	6	7	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Due to other metabolic diseases, etc.	9	6	15	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-
Due to new growth	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With organic changes of nervous system	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
Psychoneuroses	12	8	20	-	-	-	-	3	3	-	2	2	3	-	3	-	-	-	1	-	-	-	-	-
Manic-depressive psychoses	9	17	26	-	-	-	-	2	1	-	1	1	1	1	2	2	3	5	3	4	7	-	2	2
Dementia praecox	58	65	123	-	-	-	-	4	5	9	17	6	9	12	21	9	9	18	8	10	18	4	6	10
Paranoia and paranoid conditions	10	2	12	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	2	-	2
With psychopathic personality	4	4	8	-	-	-	-	1	1	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
With mental deficiency	4	5	9	-	-	-	-	2	2	1	3	-	-	-	-	1	-	-	-	-	-	-	1	1
Undiagnosed psychoses	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Without psychoses	45	25	70	-	-	-	-	3	4	7	-	5	5	3	-	9	4	13	4	2	-	6	-	8
Primary behavior disorders	1	1	2	-	-	-	-	2	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Total	313	227	540	3	-	3	25	12	37	25	12	37	23	19	42	33	20	53	27	19	46	25	15	40

TABLE 7. Age of First Admissions Classified with Reference to Principal Psychoses — Concluded

PSYCHOSES	45-49 years		50-54 years		55-59 years		60-64 years		65-69 years		70-74 years		75-79 years		80-84 years		85 years and over	
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	1	-	1	9	-	9	5	-	2	2	-	-	-	-	-	-	-	-
With other forms of syphilis	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
With other infectious diseases	-	-	-	2	-	2	1	-	-	-	-	-	-	-	-	-	-	-
Alcoholic psychoses	7	1	8	4	-	4	1	-	-	-	-	-	-	-	-	-	-	-
Due to drugs, etc.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Traumatic psychoses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With cerebral arteriosclerosis	-	-	-	-	-	-	11	6	17	12	6	18	9	8	17	4	4	8
With other disturbances of circulation	1	-	1	-	-	4	1	1	2	-	-	2	1	-	1	1	1	-
With convulsive disorders (epilepsy)	-	-	-	-	-	-	5	1	-	-	-	3	6	9	3	4	7	3
Senile psychoses	-	-	-	-	-	-	-	-	-	-	3	3	4	5	9	3	4	7
Involuntary psychoses	1	1	2	-	-	-	1	1	2	-	2	2	-	-	-	-	-	-
Due to other metabolic diseases, etc.	1	2	3	1	1	2	4	-	-	1	-	1	-	-	-	-	-	-
Due to new growth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With organic changes of nervous system	2	-	2	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
Psychoneuroses	2	1	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manic-depressive psychoses	1	-	1	1	-	1	-	-	-	1	1	1	-	-	-	-	-	-
Dementia praecox	3	8	11	1	3	3	-	-	-	-	-	-	-	-	-	-	-	-
Paranoia and paranoid conditions	-	-	-	1	5	6	1	1	1	1	-	-	-	-	-	-	-	-
With psychopathic personality	-	-	-	1	1	2	1	-	-	-	-	-	-	-	-	-	-	-
With mental deficiency	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Undiagnosed psychoses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Without psychoses	5	3	8	2	2	4	-	1	1	1	-	-	1	-	-	-	-	-
Primary behavior disorders	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	27	17	44	23	20	43	25	15	40	19	11	30	22	26	48	8	8	16
													14	14	28	7	6	13

TABLE 8. Degree of Education of First Admissions Classified with Reference to Principal Psychoses

PSYCHOSES	TOTAL			Illiterate		Reads Only		Reads and Writes		Common School		High School		College		Unknown		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	29	2	31	3	-	3	-	3	3	17	2	19	5	-	-	1	-	1
With other forms of syphilis	1	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
With other infectious diseases	3	-	3	-	-	-	-	1	1	-	-	-	1	-	1	-	-	-
Alcoholic psychoses	31	2	33	-	-	-	-	4	1	21	1	22	2	1	1	3	-	3
Due to drugs, etc.	2	1	3	-	-	-	-	-	-	-	-	-	2	1	3	-	-	-
Traumatic psychoses	1	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
With cerebral arteriosclerosis	57	53	110	3	5	8	2	3	4	30	13	43	2	5	7	16	25	41
With other disturbances of circulation	12	3	15	1	-	1	-	-	-	2	1	3	-	-	-	8	1	9
With convulsive disorders (epilepsy)	1	2	3	-	-	-	-	-	-	1	2	3	-	-	-	1	-	-
Senile psychoses	13	27	40	2	5	7	1	3	3	2	2	9	11	1	1	4	9	13
Involuntary psychoses	6	7	13	-	2	2	-	1	1	5	4	9	3	1	4	-	1	1
Due to other metabolic diseases, etc.	9	6	15	-	-	-	-	1	1	1	-	1	-	-	-	1	-	1
Due to new growth	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
With organic changes of nervous system	2	1	3	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Psychoneuroses	12	8	20	2	-	2	-	-	1	5	3	8	3	3	6	2	2	2
Manic-depressive psychoses	9	17	26	-	-	-	-	1	1	4	4	8	4	6	10	-	2	2
Dementia praecox	58	65	123	-	2	2	1	7	4	27	29	56	14	19	33	4	2	6
Paranoia and paranoid conditions	10	2	12	1	1	2	-	2	-	5	1	6	2	2	2	-	5	9
With psychopathic personality	4	4	8	1	1	2	-	1	1	2	2	4	-	-	-	-	-	-
With mental deficiency	4	5	9	1	1	2	-	1	1	2	2	4	-	-	-	-	-	-
Undiagnosed psychoses	45	1	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Without psychoses	1	25	26	1	3	4	-	8	4	12	9	34	5	5	10	1	5	4
Primary behavior disorders	1	1	2	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-
Total	313	227	540	14	19	33	5	35	20	155	87	242	48	44	92	10	3	13
																46	52	98

TABLE 10. *Economic Condition of First Admissions Classified with Reference to Principal Psychoses*

PSYCHOSES	TOTAL			Dependent			Marginal			Comfort- able	Unknown		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M. F. T.	M.	F.	T.
With syphilitic meningo-encephalitis	29	2	31	6	-	6	23	2	25	- - -	-	-	-
With other forms of syphilis	1	-	1	1	-	1	-	-	-	- - -	-	-	-
With other infectious diseases	3	-	3	-	-	-	3	-	3	- - -	-	-	-
Alcoholic psychoses	31	2	33	7	-	7	24	2	26	- - -	-	-	-
Due to drugs, etc.	2	1	3	-	-	-	2	1	3	- - -	-	-	-
Traumatic psychoses	1	-	1	-	-	-	1	-	1	- - -	-	-	-
With cerebral arteriosclerosis	57	53	110	16	14	30	38	31	69	- - -	3	8	11
With other disturbances of circulation	12	3	15	-	-	-	5	3	8	- - -	7	-	7
With convulsive disorders (epilepsy)	1	2	3	-	-	-	1	2	3	- - -	-	-	-
Senile psychoses	13	27	40	4	8	12	7	15	22	- - -	2	4	6
Involuntary psychoses	6	7	13	-	-	-	6	6	12	- - -	-	1	1
Due to other metabolic diseases, etc.	9	6	15	3	-	3	6	6	12	- - -	-	-	-
Due to new growth	2	-	2	-	-	-	1	-	1	- - -	1	-	1
With organic changes of nervous system	2	1	3	-	-	-	2	1	3	- - -	-	-	-
Psychoneuroses	12	8	20	1	1	2	9	7	16	- - -	2	-	2
Manic-depressive psychoses	9	17	26	1	1	2	8	16	24	- - -	-	-	-
Dementia praecox	58	65	123	9	6	15	48	54	102	- 1 1	1	4	5
Paranoia and paranoid conditions	10	2	12	2	-	2	8	2	10	- - -	-	-	-
With psychopathic personality	4	-	4	2	-	2	2	-	2	- - -	-	-	-
With mental deficiency	4	5	9	2	3	5	2	2	4	- - -	-	-	-
Undiagnosed psychoses	1	-	1	-	-	-	-	-	-	- - -	1	-	1
Without psychoses	45	25	70	14	5	19	28	19	47	- - -	3	1	4
Primary behavior disorders	1	1	2	1	1	2	-	-	-	- - -	-	-	-
Total	313	227	540	69	39	108	224	169	393	- 1 1	20	18	38

TABLE 11. *Use of Alcohol by First Admissions Classified with Reference to Principal Psychoses*

PSYCHOSES	TOTAL			Abstinent			Temperate			Intemperate			Unknown		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	29	2	31	8	2	10	13	-	13	7	-	7	1	-	1
With other forms of syphilis	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-
With other infectious diseases	3	-	3	1	-	1	1	-	1	1	-	1	-	-	-
Alcoholic psychoses	31	2	33	-	-	-	-	-	-	31	2	33	-	-	-
Due to drugs, etc.	2	1	3	-	1	1	1	-	1	-	-	-	1	-	1
Traumatic psychoses	1	-	1	-	-	-	-	-	-	1	-	1	-	-	-
With cerebral arteriosclerosis	57	53	110	14	29	43	22	5	27	11	3	14	10	16	26
With other disturbances of circulation	12	3	15	2	2	4	2	-	2	2	-	2	6	1	7
With convulsive disorders (epilepsy)	1	2	3	-	2	2	1	-	1	-	-	-	-	-	-
Senile psychoses	13	27	40	5	18	23	4	-	4	2	6	8	2	3	5
Involuntary psychoses	6	7	13	2	5	7	3	1	4	1	-	1	-	1	1
Due to other metabolic diseases, etc.	9	6	15	3	3	6	4	2	6	2	-	2	-	1	1
Due to new growth	2	-	2	-	-	-	1	-	1	-	-	-	1	-	1
With organic changes of nervous system	2	1	3	-	-	-	1	-	1	1	1	2	-	-	-
Psychoneuroses	12	8	20	3	7	10	4	1	5	4	-	4	1	-	1
Manic-depressive psychoses	9	17	26	3	11	14	6	3	9	-	1	1	-	2	2
Dementia praecox	58	65	123	14	43	57	26	9	35	14	1	15	4	12	16
Paranoia and paranoid conditions	10	2	12	3	2	5	6	-	6	1	-	1	-	-	-
With psychopathic personality	4	-	4	1	-	1	1	-	1	2	-	2	-	-	-
With mental deficiency	4	5	9	2	5	7	2	-	2	-	-	-	-	-	-
Undiagnosed psychoses	1	-	1	-	-	-	-	-	-	1	-	1	-	-	-
Without psychoses	45	25	70	10	11	21	15	7	22	17	4	21	3	3	6
Primary behavior disorders	1	1	2	1	-	1	-	1	1	-	-	-	-	-	-
Total	313	227	540	73	141	214	113	29	142	98	18	116	29	39	68

TABLE 14. *Discharges of Patients Classified with Reference to Principal Psychoses and Condition on Discharge*

PSYCHOSES	TOTAL			Recovered			Improved			Unimproved		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	13	4	17	1	—	1	9	4	13	3	—	3
With other forms of syphilis	2	3	5	1	1	2	1	2	3	—	—	—
With epidemic encephalitis	—	1	1	—	—	—	—	1	1	—	—	—
With other infectious diseases	2	3	5	1	3	4	—	—	—	1	—	1
Alcoholic psychoses	39	3	42	27	2	29	12	—	12	—	1	1
Due to drugs, etc.	1	—	1	1	—	1	—	—	—	—	—	—
With cerebral arteriosclerosis	12	10	22	2	1	3	10	9	19	—	—	—
With other disturbances of circulation	1	1	2	1	1	2	—	—	—	—	—	—
With convulsive disorders (epilepsy)	2	3	5	2	2	4	—	1	1	—	—	—
Senile psychoses	3	—	3	1	—	1	2	—	2	—	—	—
Involuntal psychoses	2	6	8	2	—	2	—	6	6	—	—	—
Due to other metabolic diseases, etc.	6	5	11	3	3	6	3	2	5	—	—	—
Due to new growth	1	—	1	—	—	—	—	—	—	1	—	1
With organic changes of nervous system	1	3	4	1	2	3	—	1	1	—	—	—
Psychoneuroses	17	15	32	7	8	15	7	6	13	3	1	4
Manic-depressive psychoses	23	24	47	15	10	25	6	14	20	2	—	2
Dementia praecox	46	57	103	18	9	27	19	37	56	9	11	20
Paranoia and paranoid conditions	4	8	12	—	—	—	2	7	9	2	1	3
With psychopathic personality	4	—	4	4	—	4	—	—	—	—	—	—
With mental deficiency	3	5	8	1	3	4	1	2	3	1	—	1
Undiagnosed psychoses	1	—	1	1	—	1	—	—	—	—	—	—
Without psychoses	65	36	101	—	—	—	—	—	—	—	—	—
Primary behavior disorders	2	1	3	—	—	—	2	1	3	—	—	—
Total	250	188	438	89	45	134	74	93	167	22	14	36

TABLE 15. *Hospital Residence during This Admission of Court First Admissions Discharged during 1937*

PSYCHOSES	Number			Average Net Hospital Residence in Years		
	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	6	3	9	1.44	.34	1.08
With other forms of syphilis	1	2	3	4.50	1.56	2.54
With other infectious diseases	2	2	4	.12	.41	.26
Alcoholic psychoses	23	2	25	2.11	.20	1.96
With cerebral arteriosclerosis	10	8	18	.48	.74	.59
With other disturbances of circulation	1	1	2	.04	.04	.04
With convulsive disorders (epilepsy)	2	2	4	.12	.20	.16
Senile psychoses	3	6	9	.26	1.67	1.17
Involuntal psychoses	1	—	1	.37	—	.37
Due to other metabolic diseases, etc.	5	3	8	.92	.20	.65
Due to new growth	1	—	1	.04	—	.04
With organic changes of nervous system	—	2	2	—	.16	.16
Psychoneuroses	14	8	22	.21	.10	.17
Manic-depressive psychoses	7	11	18	.51	1.20	.85
Dementia praecox	33	35	68	.60	.44	.52
Paranoia and paranoid conditions	2	2	4	.20	.16	.18
With psychopathic personality	2	—	2	.20	—	.20
With mental deficiency	2	3	5	.20	.34	.28
Undiagnosed psychoses	1	—	1	.46	—	.46
Without psychoses	50	22	72	.07	—	.07
Primary behavior disorders	1	1	2	.12	.12	.12
Total	167	113	280	.63	.49	.57

TABLE 16. *Causes of Death of Patients Classified with Reference to Principal Mental Disorders*

CAUSES OF DEATH	TOTAL			With syphilitic meningo-encephalitis		With other forms of syphilis		With epidemic encephalitis		With other infectious diseases		Alcoholic psychoses		Traumatic psychoses		With cerebral arterio-sclerosis		With other disturbances of circulation	
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
<i>Infectious and Parasitic Diseases:</i>																			
Erysipelas	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	
Lethargic encephalitis (epidemic)	1	2	3	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	
Tuberculosis of the respiratory system	16	—	16	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	
Tuberculosis of other organs	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	
Syphilis (non-nervous forms)	1	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	
Purulent infection, septicaemia (non-puer-peral)	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Cancer and Other Tumors:</i>																			
Cancer and other malignant tumors	1	6	7	—	—	—	—	—	—	—	—	—	1	—	—	1	1	2	
<i>Rheumatic Diseases, Nutritional Diseases, Diseases of the Endocrine Glands and Other General Diseases:</i>																			
Chronic rheumatism, osteoarthritis	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Pellagra	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	
Diabetes	1	2	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Other diseases	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Diseases of the Blood and Blood-making Organs</i>																			
Hemorrhagic conditions	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	
<i>Diseases of the Nervous System and Organs of Special Sense:</i>																			
General paralysis of the insane	19	4	23	18	3	21	1	1	2	—	—	—	—	—	—	—	—	—	
Other diseases of the nervous system	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Diseases of the organs of special sense (eye, ear and mastoid)	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<i>Diseases of the Circulatory System:</i>																			
Chronic endocarditis (valvular disease)	3	1	4	—	—	—	—	—	—	—	—	1	1	—	—	1	—	—	
Diseases of the myocardium	2	2	4	—	—	—	—	—	—	—	—	—	—	—	—	1	2	3	
Diseases of the coronary arteries and an-gina pectoris	3	1	4	—	—	—	—	—	—	—	—	1	—	—	—	1	—	1	
Other diseases of the heart	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Arteriosclerosis	13	8	21	—	—	—	—	—	—	—	—	1	1	2	—	8	3	11	
Gangrene	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
Other diseases of the arteries	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	
Other diseases	1	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	
<i>Diseases of the Respiratory System:</i>																			
Bronchitis	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	
Bronchopneumonia (including capillary bronchitis)	43	36	79	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	
Lobar pneumonia	18	12	30	—	—	—	—	—	—	1	1	2	—	1	1	23	20	43	
Pleurisy	1	—	1	—	—	—	—	—	—	—	—	4	—	6	1	7	—	—	
Other diseases (tuberculosis excepted)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

<i>Rheumatic Diseases, Nutritional Diseases, Diseases of the Endocrine Glands and Other General Diseases:</i>																											
Chronic rheumatism, osteoarthritis	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Pellagra	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Diabetes	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Diseases of the Blood and Blood-making Organs:</i>																											
Hemorrhagic conditions	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Diseases of the Nervous System and Organs of Special Sense:</i>																											
General paralysis of the insane	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other diseases of the nervous system	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Diseases of the organs of special sense (eye, ear and mastoid)	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Diseases of the Circulatory System:</i>																											
Chronic endocarditis (valvular disease)	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Diseases of the myocardium	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Diseases of the coronary arteries and angina pectoris	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other diseases of the heart	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Arteriosclerosis	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Gangrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other diseases of the arteries	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Diseases of the Respiratory System:</i>																											
Bronchitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Bronchopneumonia (including capillary bronchitis)	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Lobar pneumonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Pleurisy	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other diseases (tuberculosis excepted)	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Diseases of the Digestive System:</i>																											
Diarrhea and enteritis	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Hernia, intestinal obstruction	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Diseases of the Genito-Urinary System:</i>																											
Nephritis (acute, chronic and unspecified)	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other diseases of the kidneys and ureters (puerperal diseases excepted)	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Diseases of the prostate</i>																											
<i>Violent and Accidental Deaths:</i>																											
Suicide	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Accidental traumatism	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
Other external causes	-	-	-	-	-	-	-	-	-	-	-	-	-	-													
<i>Ill-defined Causes of Death:</i>																											
Total	2	-	2	15	22	37	4	1	5	6	3	9	3	1	4	7	5	12	22	28	50	1	1	2	6	-	6

TABLE 17. Age of Patients at Time of Death Classified with Reference to Principal Psychoses

PSYCHOSES	TOTAL			20-24 years			25-29 years			30-34 years			35-39 years			40-44 years			45-49 years		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	19	3	22	1	—	1	—	—	—	1	—	1	1	1	2	2	—	2	2	—	2
With other forms of syphilis	2	2	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With epidemic encephalitis	1	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
With other infectious diseases	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholic psychoses	13	3	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Traumatic psychoses	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With cerebral arteriosclerosis	58	43	101	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With other disturbances of circulation	9	2	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With convulsive disorders (epilepsy)	2	22	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Senile psychoses	15	2	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Involutional psychoses	4	1	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Due to other metabolic diseases, etc.	3	6	9	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—
With organic changes of nervous system	3	1	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manic-depressive psychoses	7	5	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dementia praecox	22	28	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paranoia and paranoid conditions	1	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With mental deficiency	6	1	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	170	114	284	1	—	1	4	1	5	2	—	2	4	5	9	6	2	8	8	4	12

TABLE 17. Age of Patients at Time of Death Classified with Reference to Principal Psychoses — Concluded

Psychoses	50-54 years		55-59 years		60-64 years		65-69 years		70-74 years		75-79 years		80-84 years		85 years and over			
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	6	1	7	2	1	3	3	1	1	—	—	—	—	—	—	—	—	—
With other forms of syphilis	—	—	—	—	—	—	2	—	1	—	—	—	—	—	—	—	—	—
With epidemic encephalitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
With other infectious diseases	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alcoholic psychoses	2	—	2	2	—	2	4	1	5	1	3	1	—	—	—	—	—	—
Traumatic psychoses	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
With cerebral arteriosclerosis	—	1	1	2	5	7	4	2	6	11	6	17	19	15	34	13	9	22
With other disturbances of circulation	—	—	—	3	1	4	1	—	—	2	—	2	2	—	—	4	2	6
With convulsive disorders (epilepsy)	—	—	—	—	—	—	1	—	1	—	—	—	1	—	1	1	—	1
Senile psychoses	—	—	—	—	—	—	—	—	—	—	—	—	3	5	8	3	5	8
Involuntary psychoses	—	—	—	—	—	—	2	2	1	—	—	—	1	1	2	—	—	—
Due to other metabolic diseases, etc.	1	1	2	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—
With organic changes of nervous system	1	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Manic-depressive psychoses	1	—	1	—	—	—	2	2	1	3	—	—	3	—	—	—	—	—
Dementia praecox	4	1	5	2	5	7	1	3	4	4	3	7	2	4	6	2	1	3
Paranoia and paranoid conditions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
With mental deficiency	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Total	16	4	20	11	14	25	22	7	29	18	17	35	33	24	57	21	19	40
													10	8	18	14	9	23

TABLE 18. Total Duration of Hospital Life of Patients Dying in Hospital Classified According to Principal Psychoses

PSYCHOSES	TOTAL			Less than 1 month			1-3 months			4-7 months			8-12 months			1-2 years			3-4 years		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	19	3	22	1	1	2	2	1	3	3	2	5	1	1	2	6	1	7	4	1	4
With other forms of syphilis	2	2	4	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With epidemic encephalitis	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With other infectious diseases	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Alcoholic psychoses	13	3	16	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Traumatic psychoses	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With cerebral arteriosclerosis	58	43	101	7	16	23	13	4	17	12	9	21	4	2	6	15	5	20	3	3	6
With other disturbances of circulation	2	2	4	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With convulsive disorders (epilepsy)	15	22	37	4	4	8	5	3	8	1	3	4	1	1	2	3	8	11	1	5	5
Senile psychoses	4	4	8	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Involitional psychoses	9	9	18	2	2	4	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Due to other metabolic diseases, etc.	3	3	6	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With organic changes of nervous system	7	7	14	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Manic-depressive psychoses	22	28	50	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Dementia praecox	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
Paranoia and paranoid conditions	6	6	12	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2
With mental deficiency	170	114	284	21	19	40	25	10	35	21	20	41	6	5	11	33	17	50	12	9	21
Total	170	114	284	21	19	40	25	10	35	21	20	41	6	5	11	33	17	50	12	9	21

TABLE 18. *Total Duration of Hospital Life of Patients Dying in Hospital Classified According to Principal Psychoses — Concluded*

PSYCHOSES	5-6 years		7-8 years		9-10 years		11-12 years		13-14 years		15-19 years		20 years and over	
	M.	F. T.	M.	F. T.	M.	F. T.	M.	F. T.	M.	F. T.	M.	F. T.	M.	F. T.
With syphilitic meningo-encephalitis														
With other forms of syphilis														
With epidemic encephalitis														
With other infectious diseases														
Alcoholic psychoses														
Traumatic psychoses														
With cerebral arteriosclerosis														
With other disturbances of circulation														
With convulsive disorders (epilepsy)														
Senile psychoses														
Involutional psychoses														
Due to other metabolic diseases, etc.														
With organic changes of nervous system														
Manic-depressive psychoses														
Dementia praecox														
Paranoia and paranoid conditions														
With mental deficiency														
Total	7	7 14	3	2 5	3	2 5	4	6 10	3	1 4	11	4 15	21	12 33

TABLE 19 *Average Length of Hospital Residence during the Present Admission of All First Admissions in Residence on September 30, 1937*

PSYCHOSES	Number			Average Net Hospital Residence in Years		
	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	79	23	102	4.71	7.62	5.36
With other forms of syphilis	6	6	12	7.50	4.08	5.79
With epidemic encephalitis	4	3	7	5.50	7.50	6.35
With other infectious diseases	2	—	2	3.97	—	3.97
Alcoholic psychoses	86	6	92	9.41	10.15	9.46
Due to drugs, etc.	2	1	3	1.47	.44	1.12
Traumatic psychoses	5	1	6	2.28	7.50	3.15
With cerebral arteriosclerosis	58	62	120	2.59	4.16	3.06
With other disturbances of circulation	3	—	3	.98	—	.98
With convulsive disorders (epilepsy)	3	2	5	10.83	12.50	11.50
Senile psychoses	17	46	63	5.37	4.37	4.62
Involuntional psychoses	11	29	40	6.12	6.45	6.36
Due to other metabolic diseases, etc.	8	6	14	2.09	4.31	3.04
With organic changes of nervous system	6	4	10	2.15	5.75	3.59
Psychoneuroses	4	6	10	1.72	6.65	4.68
Manic-depressive psychoses	13	28	41	5.95	3.56	4.32
Dementia praecox	307	335	642	13.16	11.64	12.36
Paranoia and paranoid conditions	24	43	67	5.99	10.43	8.83
With psychopathic personality	5	8	13	14.48	15.12	14.88
With mental deficiency	35	45	80	11.52	10.20	10.78
Without psychoses	—	3	3	—	.64	.64
Total	678	657	1,335	9.43	9.21	9.32

TABLE 19A. *Average Length of Hospital Residence during the Present Admission of All Readmissions in Residence on September 30, 1937*

PSYCHOSES	Number			Average Net Hospital Residence in Years		
	M.	F.	T.	M.	F.	T.
With syphilitic meningo-encephalitis	27	8	35	6.31	7.37	6.55
With other forms of syphilis	3	2	5	1.83	4.50	2.90
With epidemic encephalitis	5	2	7	4.30	6.00	4.78
With other infectious diseases	—	1	1	—	12.50	12.50
Alcoholic psychoses	52	5	57	7.94	10.10	8.13
Due to drugs, etc.	—	2	2	—	12.00	12.00
Traumatic psychoses	3	—	3	2.66	—	2.66
With cerebral arteriosclerosis	15	18	33	4.50	3.50	3.95
With other disturbances of circulation	—	1	1	—	2.50	2.50
With convulsive disorders (epilepsy)	7	4	11	6.50	5.75	6.22
Senile psychoses	7	17	24	10.92	6.08	7.50
Involuntional psychoses	6	9	15	7.50	8.33	8.00
Due to other metabolic diseases, etc.	1	1	2	7.50	7.50	7.50
With organic changes of nervous system	6	4	10	6.66	3.50	5.40
Psychoneuroses	7	5	12	6.21	6.70	6.41
Manic-depressive psychoses	34	42	76	7.91	8.76	8.38
Dementia praecox	241	341	582	10.90	10.31	10.56
Paranoia and paranoid conditions	7	24	31	13.14	8.79	9.77
With psychopathic personality	3	6	9	12.50	8.00	9.50
With mental deficiency	39	39	78	10.06	9.44	9.75
Without psychoses	1	4	5	3.50	1.50	1.90
Total	464	535	999	9.24	9.32	9.28

TABLE 20. *Family Care Statistics for Year Ended September 30, 1937*

	Males	Females	Total
Remaining in Family Care September 30, 1936	24	86	110
On Visit from Family Care September 30, 1936	4	21	25
Admitted to Family Care during the year	40	63	103
Whole Number of Cases within the Year	64	149	213
Discharged from Family Care within the Year	38	67	105
Discharged Outright from Family Care	2	2	4
From Family Care to Escape Status	3	2	5
From Family Care to Visit Status	8	19	27
Returned to Institution	25	44	69
Returned to Institution from Escape	3	2	5
Returned to Institution from Visit	3	13	16
Remaining in Family Care September 30, 1937	26	82	108
On Visit from Family Care September 30, 1937	5	6	11
Average Daily Number in Family Care during Year	29	84	113
Supported by State	18	58	76
Private	8	24	32

